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OCTOBER 1959

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Aloe Vera Gel ... Page 27 ... Cosmetic Sun Screens ... Page 29

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American Perfumer
AND AROMATICS

VOL. 74, NO. 4 OCTOBER, 1959

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Progress...

Flow of lines of constructive editorial material, especially when of a technical nature, are not easily opened up.

It takes time, plus a lot of drive as well as hard work. It takes enormous follow through as well as occasional whip-cracking. Above all it requires a broadness of knowledge that extends from the immediate field into related fields; that extends from what's-going-on-in-this country into Europe and beyond.

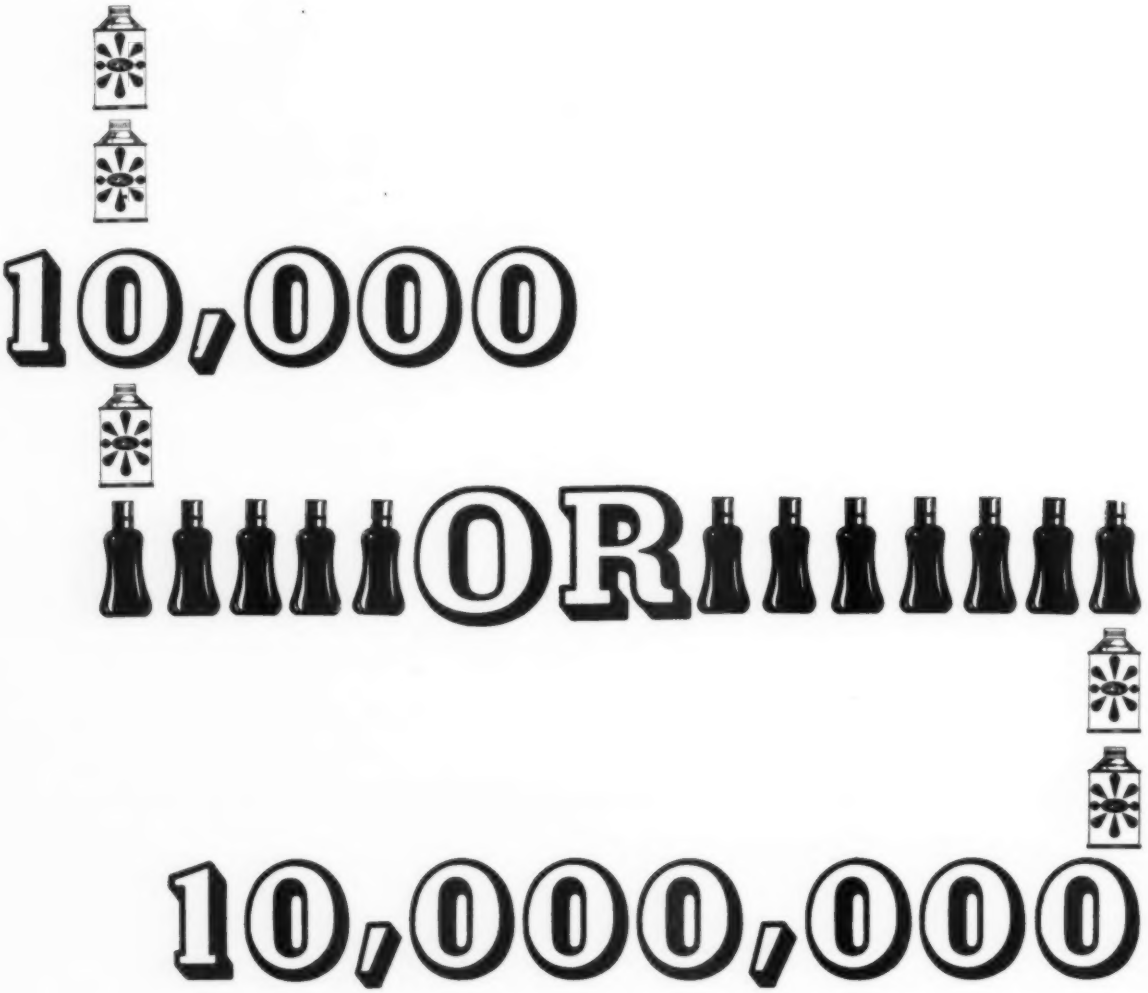
This comes to mind because of a progress report which landed on my desk this morning from editorial director, Maison G. deNavarre.

Among a wide range of subjects to be covered editorially in early issues of the American Perfumer and Aromatics are: Steroids, Zinc Oxide, Ion Exchange Resins, External Application Vitamen A, Potential Usefulness of UV Light Absorbers, Glycyrrhetinic Acid, Hair Spray Toxicity, a series of two or three articles Make-Up, Cream Sachets, Hair Symposium, French Technique in Manufacture of Cologne and Perfume, and Dyestuffs and Hair Color.

The report actually covers the opening of more than 40 flow lines of original technical articles for our pages, but does not include a score of others of special interest to management and does not cover Documentaries or any of our regular features.

For my part, I am all for the editor who knows his way around and who is more at home in the lab than he is at a desk.

James H. Moore, Jr.
Publisher



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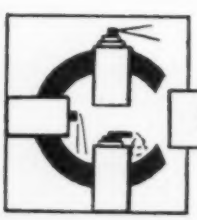

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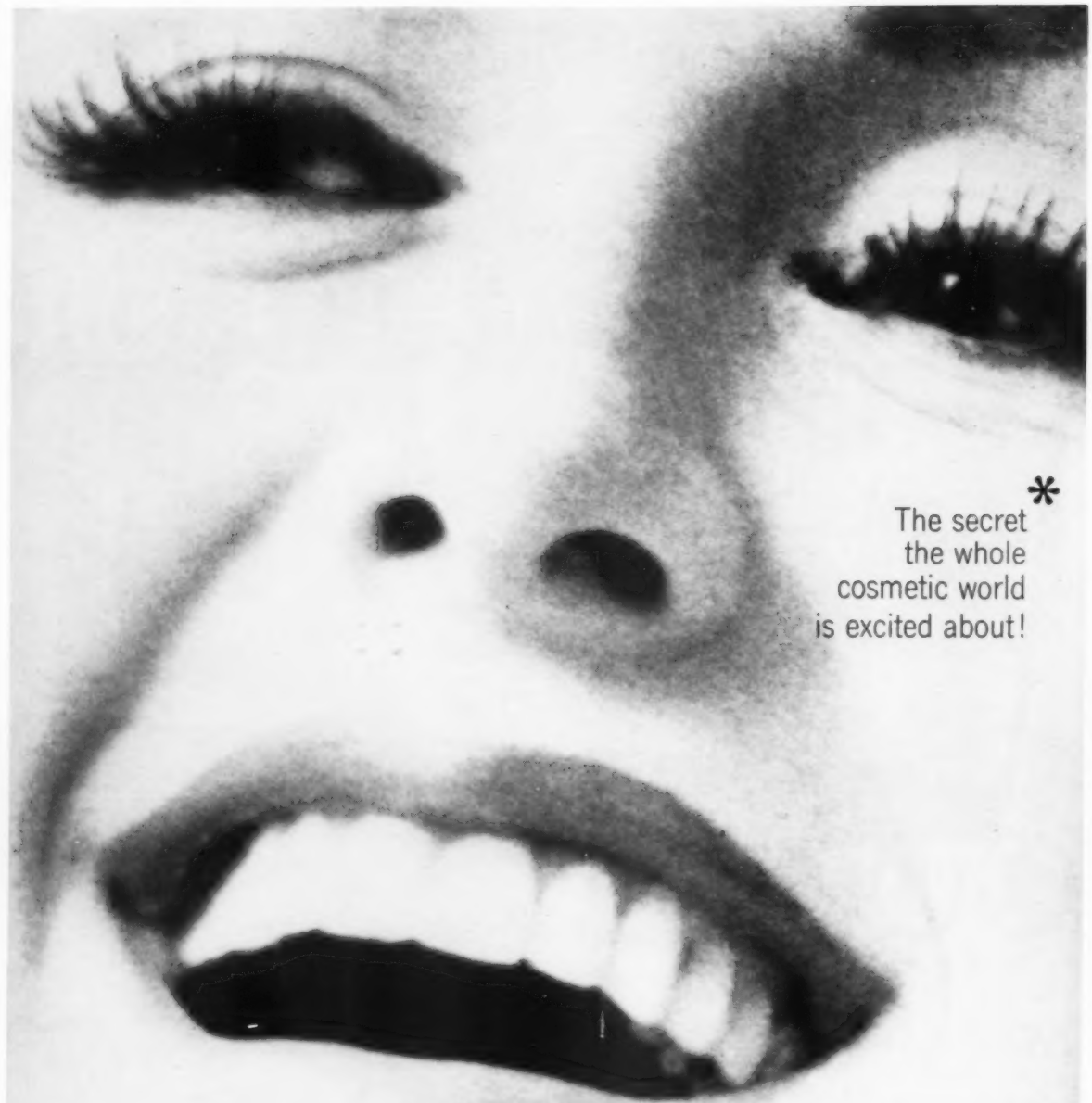

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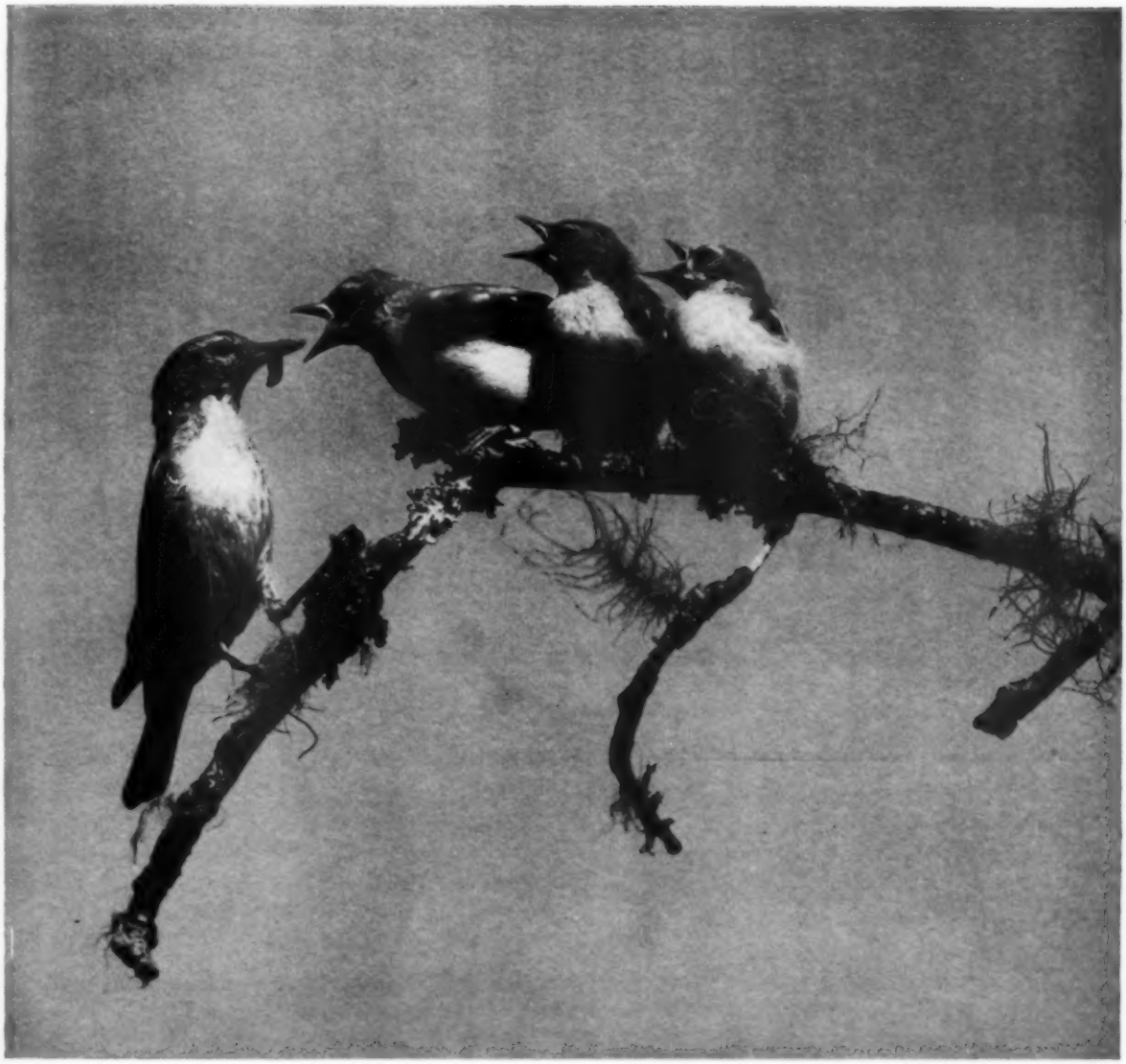

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LAST MINUTE NEWS . . .

Smith Kline & French Plans $4 Million Expansion

Smith Kline & French Laboratories recently announced plans for a $4 million expansion program at its Philadelphia headquarters. Walter A. Munns, president, said the project included the addition of three floors to an existing five story wing and the installation of two new capsule-making machines. The construction will provide an additional 45,000 square feet of space for the expansion of research facilities and the relocation of administrative offices. The project is expected to be completed by August, 1960. The current expansion program follows another $1 million building project underway at the firm's suburban plant in Upper Merion, Pa. A $3 million laboratory and manufacturing plant was recently opened by the firm's British subsidiary.

Hardware-Housewares to Promote Aerosol Products

A promotion of aerosol-packaged products will be sponsored in a chain of three northern New Jersey hardware-houseware supermarts October 22 through 25 by the Aerosol Div. of the Chemical Specialties Manufacturers Assn. The Aerosol Fair will feature a demonstrator showing proper use of a wide range of houseware and do-it-yourself aerosol products carried by the stores. A massed display of aerosols hung from the ceiling will invite customers to "guess how many," with a valuable prize going to the individual who first guesses the correct number or comes the closest during the four day promotion. Customers will be interviewed to determine their attitude toward aerosol push-button packaging, and results of this poll will be made available to aerosol marketers.

Hollywood Chamber of Commerce Honors Max Factor Anniversary

Another outstanding tribute was paid to Max Factor & Co. on October 9 when the Hollywood Chamber of Commerce honored the firm's 50th anniversary year at a special luncheon at the Hollywood Roosevelt Hotel. Highlighting the affair was a slide presentation covering the half century history of Max Factor & Co., and the symbolic personal appearance of fifty beautiful girls, with each representing a nearby community in Los Angeles county. Representatives of three generations of the Max Factor family were guests of honor, along with civic and business leaders of Hollywood. Max Factor was presented with a special plaque commemorative of the company's 50th anniversary.

Sealed-Cargo Vans For Perfumes, Cosmetics

Van-Cargo International announces a door-to-door freight service using sealed vans for international shipment of cosmetics and perfumes. Considerable savings for this "containerized" type of shipment is claimed because pilferage and breakage are virtually eliminated, costly export boxing is no longer needed, and marine insurance rates, as a consequence, are reduced. Ocean freight is charged only on net contents of the van, and not for the van itself.

Packaging Institute Plans 21st Annual Packaging Forum

The theme of the Packaging Institute's 1959 National Packaging Forum is "Industry's Launching Site for Projecting Packaging Progress." 1500 packaging men from all parts of the country are expected to attend the meeting to be held at the Statler-Hilton in New York, November 16 through 18. Luncheon speakers will be: William C. Stolk, president, American Can Co., addressing the opening Packaging luncheon on Monday; Miss Marie Kiefer, secretary-manager of the National Assn. of Retail Grocers, addressing the Tuesday luncheon; John L. Harvey, deputy commissioner, Food and Drug Administration speaking at the Wednesday luncheon. Industry leaders will address special seminars on Package Marketing, Research and Development, Drug and Pharmaceutical, Production Line and Machinery, Printing, Industrial Packaging, Food, and Closures.

Brylcreem to Offer "Kookie" Consumer Promotion

Brylcreem will sponsor an exclusive "Way Out With Kookie" Book consumer promotion this fall, according to Harold F. Ritchie, Inc. The promotion will offer consumers the opportunity to obtain a 72 page book authored by the national teenage idol, Edd "Kookie" Byrnes. The unusual consumer offer will be made at a time when "Kookie," famous for his portrayal on ABC/Tv's "77 Sunset Strip" and now the top-rated television show in the nation, is at an all-time high in national popularity as a result of records, motion pictures and personal appearances.

Soviet Aid to Raise India's Drug Output

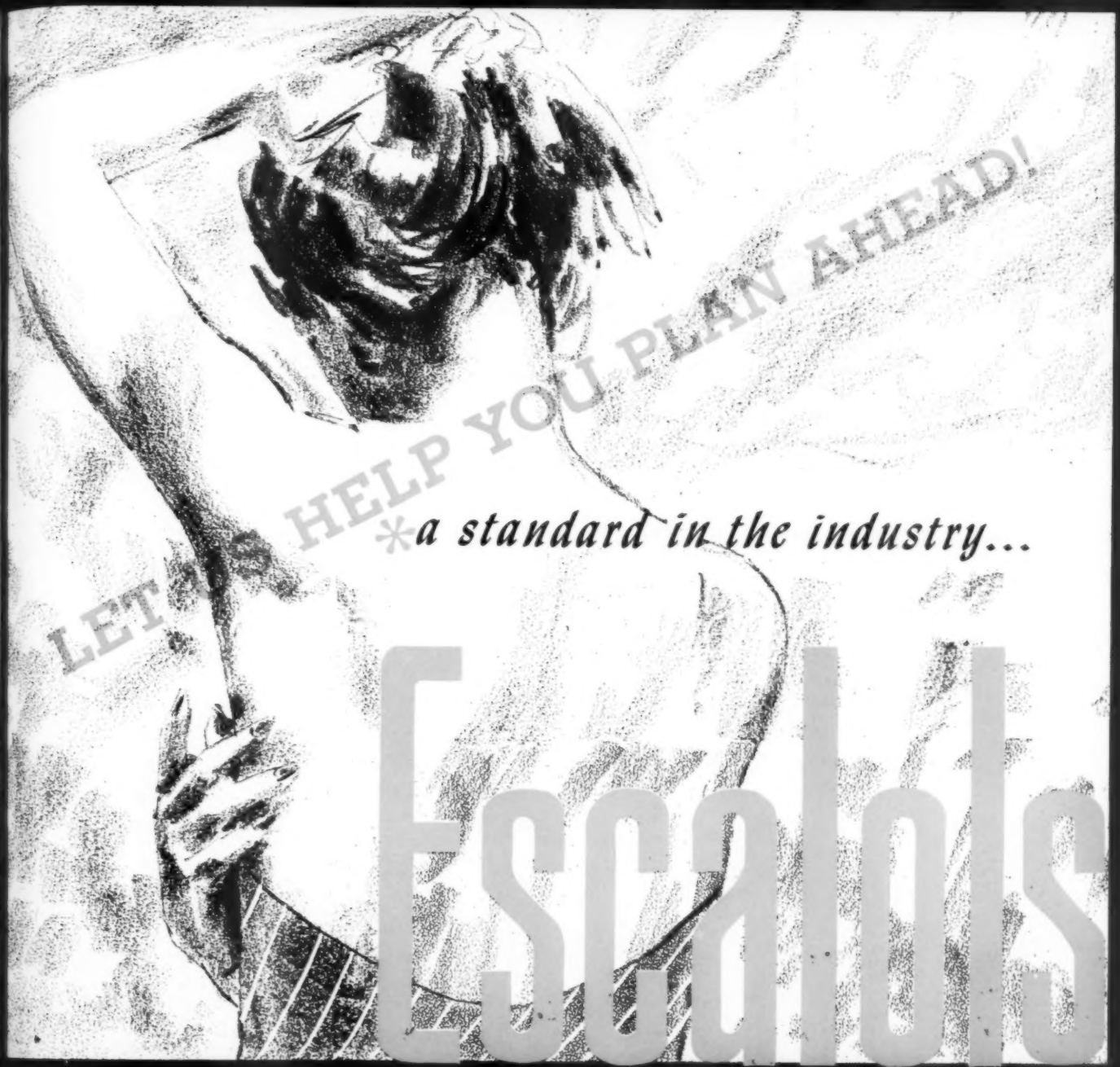
Part of a $375 million USSR credit, repayable in goods, will be used to establish five new drug units. Until a few years ago pharmaceutical manufacturers in India produced mainly formulations by importing drugs and chemicals in bulk. The Minister for industry feels that the addition of the five new units would make India more self-sufficient in all important and essential basic drugs and medicines. The Development Council for Drugs, Dyes and Intermediates was told that in 1958 production amounted to $94½ million and this year might rise to $136½ million.

People

Elmer F. Schumacher, a former Du Pont sales executive has been appointed special chemical and plastics consultant to the Commonwealth of Puerto Rico. . . . Roy Hemmingstad has been appointed as a sales representative for the E. J. McKernan Co. line of Seaquist Seaspray Aerosol Valves. . . . Davis Philipson is the new Director of Purchasing at Aerosol Techniques, Inc. . . . Gus Drubel, technical sales representative of the Newport Industries Co., recently celebrated 50 years in the industry.

Society of Cosmetic Chemists Annual Meeting Program

The annual meeting, reception and dinner dance of the Society of Cosmetic Chemists will be held December 2, at the Hotel Commodore in New York City. Dr. L. D. Apperson, program chairman, has announced the following program for this meeting: Morning Session—New Trends in Cosmetic Testing, Dr. Louis C. Barail, Consulting Biochemist, New York City; The Beauty of the Enzyme Screen, Dr. V. F. Lisanti, Tufts University School of Medicine; Vinyl Copolymer in the Cosmetic Cosmos, Paul Weitz, National Starch and Chemical Corp.; The Closed, Open, Prophetic and Repeated Insult Patch Tests in Study of Cutaneous Reaction, Dr. Joseph V. Klauder, Consulting Dermatologist, Philadelphia. Afternoon Session—Dental Calculus, Dr. Stanley Hazen and Dr. Helmut Zander, Dept. of Periodontology, Eastman Dental Dispensary, Rochester, N. Y.; New Polysaccharide Gum from Dextrose by Microbial Synthesis, Dwight L. Miller, R. F. Anderson, Allene Jeanes and S. P. Rogovin, Northern Utilization Research and Development Div. of U. S. D. A., Peoria, Ill.; Chemistry of the Inflammatory Response of the Skin, Dr. J. C. Houck, Biochemical Laboratory, Children's Hospital Research Foundation, Washington, D. C. A reception will be held in the Century Room of the Hotel Commodore at 6:30 p.m. and will be followed by a dinner dance. Advance registration is urged. Walter Wynne is chairman of the Arrangements Committee.



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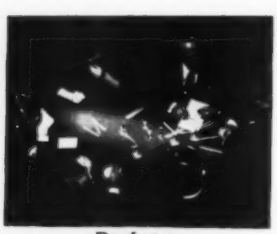

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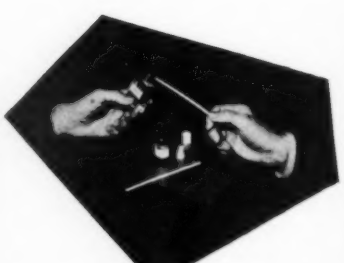

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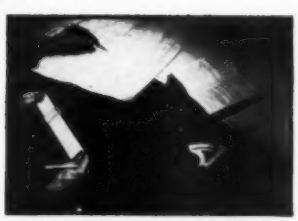

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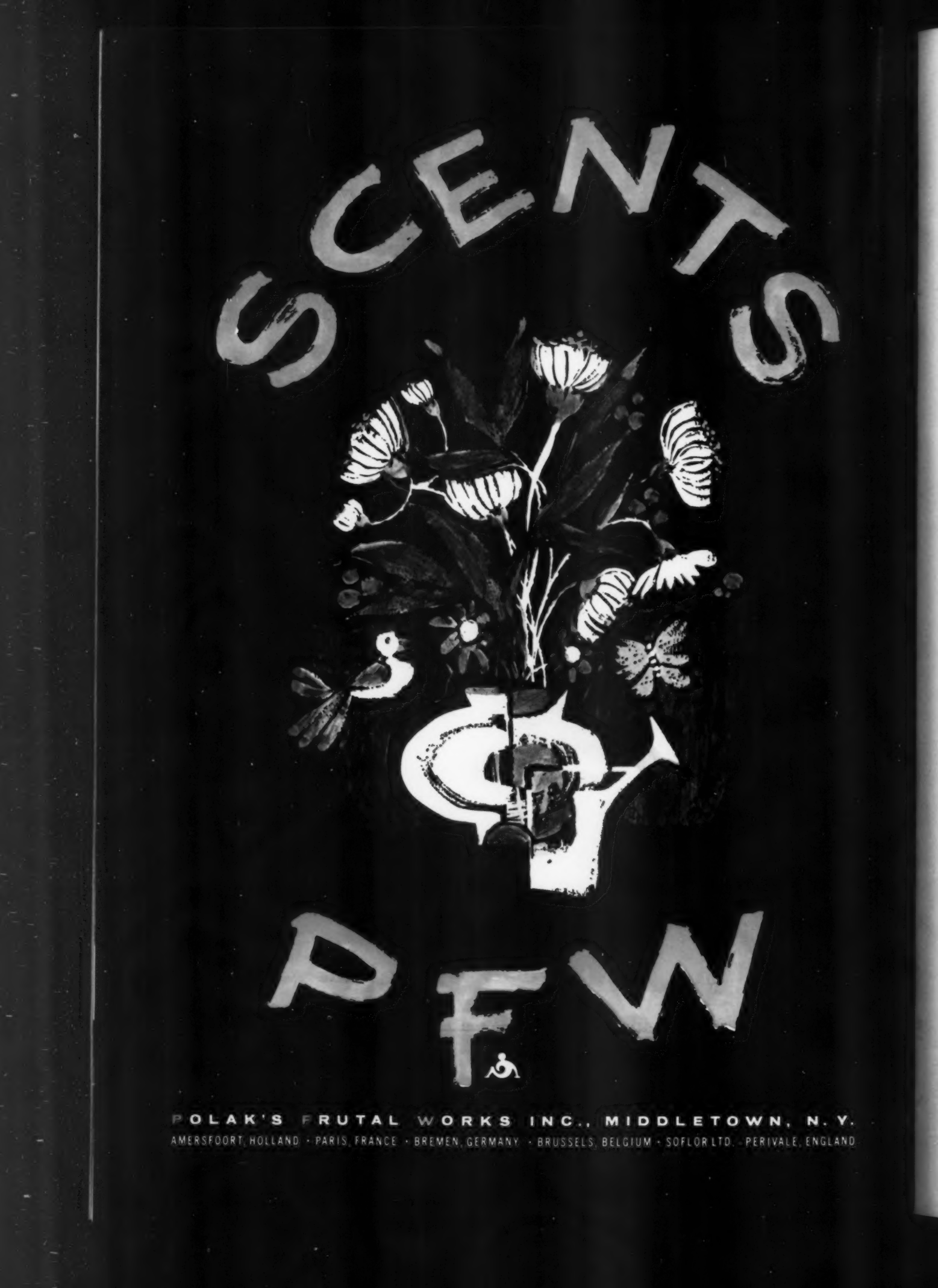

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EUROPE AGAIN

The meeting of the various Societies of Cosmetic Chemists in Brussels to form a Federation took place on September 7th in one of the government buildings. We were hosted by the Belgian Society, Gui Dony, President; Dr. R. H. Marriott was meeting Chairman.

Sab Strianse the chairman of the U. S. delegation has a story to tell about his trip that sounds like a TV script. First, his passport was outdated, the Saturday before Labor Day. . . . Anyway, he made it in luxury that even Mr. K. didn't have on his plane.

A Federation was formed. A President and a Comité de la Direction were elected.

After the Federation meeting, I visited in Amsterdam with Dr. Muus and Betty Beets; also with Dr. Steve Jellinek and his family, who by the way, are coming to the U. S. permanently. Couldn't reach Joe Jordan.

Then to Copenhagen where I discussed S. C. C. affairs with officers of the Danish S. C. C. at lunch in the Sky Room of the Europa Hotel. Messrs. Steffenson, Thomsen and Petresch were my guests to an open faced sandwich luncheon for which the Danes are famous.

The next day to Frankfurt, Darmstadt, Karlsruhe, Etlingen and Baden-Baden, in that order, where I met Dr. Freytag and co-workers, Drs. Neugebauer and Wolff and Clemens Auer. Again enjoyed saddle of venison at the Park terrace dining room in Darmstadt. The Germans certainly know how to prepare it.

From there to Geneva where I met with officers of the Swiss S. C. C. Kurt Pfeiffer took Drs. Barbier and Brun along with me to a select spot where they had a private dining room upstairs. Wonderful food and service. Then came my first visit to a Swiss night club, the Ba-Ta-Clan. Still don't know how the star of the show gets the name Mlle. Chinchilla. Just like some places in Place Pigalle, smoky, crowded and a good show, but you don't have to drink sour champagne at $15-$20.00 a bottle.

While in Geneva I saw an unusual lipstick making process that you will be reading about in the AMERICAN PERFUMER later.

Now to Paris where M. Schmuck was awaiting me at Orly airport to meet with Drs. Velon, Sfiras and Desperois and M. Florent for lunch at the Relais Bisson. Champagne to celebrate my election to the first presidency of the International Federation of Societies of Cosmetic Chemists. Later met Pierre Blaizot for cocktails. Lunched the next day with Louis Amic and Pierre d'Aigremont at a savory spot not too far from the Hotel Napoleon where I stayed while in Paris.

Later in the day bumped into Ed and Gertrude Breck on the rue St. Honore near the Castiglione Hotel where they stayed. That night was their guest at a dinner party at the Tour d'Argent where the prices are not on the menu (and if you are concerned about them, you are in the wrong place). Guess their pressed duck is absolutely the greatest, but I like duck the way Jeanette (Mrs. deN.) prepares it.

From Paris to London for the week end where I saw our John Clifford and family, Freddy Herzka and the Pickthalls. And again the Brecks with whom I went to Mass that Sunday. Tried in vain to 'phone Freddy Wells from a pay 'phone at the airport but to no avail. Either I don't know how to drop the 4 pence into the box correctly—or something. Had the same difficulty in 'phoning Jack Wilkinson. By this time my jet flight was loading. Only seven hours to New York with a half hour at Keflavik, ICELAND, for refueling.

It was a whirlwind trip. Weather lovely. The people, as always, most friendly and hospitable. The water —now I drink it out of the tap and have had no travelers' problems. The food was fine so long as you didn't order steak. The wines—the best!

Dr. R. Marriott was chairman at the Federation meeting. Others present were Kurt Pfeiffer (Swiss); Drs. L. Masch and H. Neugebauer (Germany); Dr. J. Artigas and Mr. Susanna Gregory (Spain); Mr. G. Dony, G. Dumont and Dr. A. M. J. Mareel (Belgium); Dr. P. Velon (France) and Jack Wilkinson, the other British delegate together with the secretary of the British S. C. C. Mrs. E. Millman.

NOTES

It is going to be a few weeks yet before DuPont's resin Delrin is available for plastic moulders to fabricate into cosmetic containers. . . . German Patent 810,659 covers

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the use of metallic salts of benzoic acid or chlorinated phenols either as a spray or vapor to cellulosic fabric to render it antiseptic. . . . U. S. Patent 2,853,422 (1958) covers the use of propylene glycol in combination with polyethylene glycol leci-oleate as co-solvents for bromo acid in a lipstick mass devoid of liquid fats. . . . Friederich and Witjen make a case for irritating action of perfume materials in a study given before the German Society of Cosmetic Chemists in Bonn in 1958, which appears in PARFUMERIE COSMETIQUE SAVONS for July, 1959. It seems that the impurities were found responsible for irritation by cyclamen aldehyde and ethylphenyl glycidate. . . . Lea and Swoboda recently published a communication on the flavor of aliphatic aldehydes C_3-C_{14} and unsaturated aldehydes C_4 and C_9. They report that the flavor thresholds decreases as the molecular weight increases to C_{12} and increases again at C_{14}. . . . An answer to a recent question in the J. A. M. A. as to whether the wax coating in paper milk bottles might be carcinogenic, the editor replied that implants of paraffin pellets has produced papillomas and cancer in the bladders of mice. . . . At long last, royal jelly has been found to contain 10-Hydroxy-$\triangle^2$-decenoic acid, a substance with antibiotic properties against certain bacteria and fungi. Its activity is about a fifth of the chlorotetracyclines. . . . Wickhen Products is in the market with aluminum chlorhydrate claiming an iron content of less than 1/10 of the T. G. A. Standard. The product is sold as a solution. . . . U. S. Patent 2,864,768 covers the use of silver halide together with a heterocyclic compound. Houck reported before the A. C. S. meeting at Atlantic City that carrageenin blocks the action of pepsin in the stomach. Hence, seaweed (Irish moss) extracts may find use in treating peptic ulcer. Since seaweed colloids are used to suspend chocolate in milk, maybe this is the stuff to drink if you suffer from peptic ulcers. . . . Another antibiotic, Tylosin, is produced from a strain of *Streptomyces fradiae*. . . . Higuchi and Schroeter (*J. Am. Pharm. Assoc., Sci. Ed.*, 48, 535, 1959) show that the bisulphite often used to protect autoxidizable drugs may react with them to form corresponding sulfonic acid derivatives which are inactive. The *p* and *o*-hydroxybenzyl alcohol derivatives, the amino and nitrobenzyl alcohols are especially susceptible to this reaction.

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QUESTIONS & ANSWERS

1353: COLD WAVE NEUTRALIZER

Q. *I am having trouble with the formulation of cold wave neutralizers. First, when sodium perborate is packaged in laminated foil there is, so we are told, an additive which when added stops the bleaching action of the perborate. What is this chemical? Is it tartaric or citric acid and is this acid compatible when backed with perborate? Secondly, some manufacturers advocate sodium bromate with another powder added for packaging, such as an ammonium quartenary. I know something about surfactants but not enough to discern one from another. Is there a common sense book about these things for the ordinary, untrained chemist? B.F.S., N. Y.*

A. The only thing with which we are acquainted that can stop the bleaching action of any "per oxygen" compound is an enzyme called "catalase." This is usually sold in a solution and is applied to the hair after the oxidation has been allowed to carry on as far as is wanted. The application of catalase stops the oxidation immediately at that point. To our knowledge, it is not possible to pack the catalase with the perborate. As for the use of sodium bromate, this material has been in use for a great many years. We have not seen a package containing a quaternary compound such as you mention but see no reason why one could not be used. We suggest that you approach the manufacturers of such quaternaries: Onyx Oil and Chemical Co., 15 Exchange Place, Jersey City 2, N. J.; Stepan Chemical Co., 427 West Randolph St., Chicago 6, Ill.; Rohm & Haas Co., Washington Square, Philadelphia, Pa. We are afraid there is not much of a common sense book on surfactants such as you want. If you had been a subscriber to the AMERICAN PERFUMER during the past 12 months, you would have received a copy of the documentary on commercial surfactants which covered practically each type that is commercially offered. A good deal of the data given in this was in common sense form.

1354: ALLERGY TESTING

Q. *Please advise by literary recommendations (the more succinct and understandable to the layman, the better) as to the best approaches to the following problems and their solutions created by allergenic products in drug and cosmetic manufacturing: 1. allergy testing; 2, allergy law suits; 3. allergy insurance —if any. N. K., Ohio*

A. The allergenicity of materials or finished products is not usually determined by a layman. This is done by the dermatologist or pharmacologist especially trained to do this type of work. Generally, the work is first done on animals and is then supplemented, if needs be, on man himself. There are a number of laboratories that do this sort of work, and we are pleased to give you the names of the Leberco Laboratories, 123 Hawthorne St., Roselle Park, N. J., and Rosner-Hixson Laboratories, 7737 South Chicago Ave., Chicago 19, Ill. If your public library has it, you can find the number of people who have instituted law suits resulting from allergic responses to a manufacturer's product in the Prentice-Hall Reports on product liability cases. As to insurance on allergy; of course, you cannot get insurance against allergies since there is no known nonallergic material on this earth. However, you can get product liability insurance and this you can request from any company selling liability insurance in your area. If they themselves do not handle it, they no doubt can suggest someone who does.

1355: HYDROQUINONE

Q. *We would greatly appreciate having your opinion on the value and effectiveness of hydroquinone and some of its derivatives, as bleaching agents for the skin in colored people, when incorporated into a facial cream. D. H., Indiana.*

A. It is our opinion that derivatives of hydroquinone used for bleaching the skin should be used only by qualified medical doctors and no one else There are possibly some far reaching significances to using these materials and in the hands of the wrong person could bring some undesirable side effects. The man who first discovered the skin bleaching action of hydroquinone derivatives was most anxious that they never get into general usage, and we cannot help but agree with him. We regret that we find it impossible to suggest the use of these materials for the purpose you outlined.

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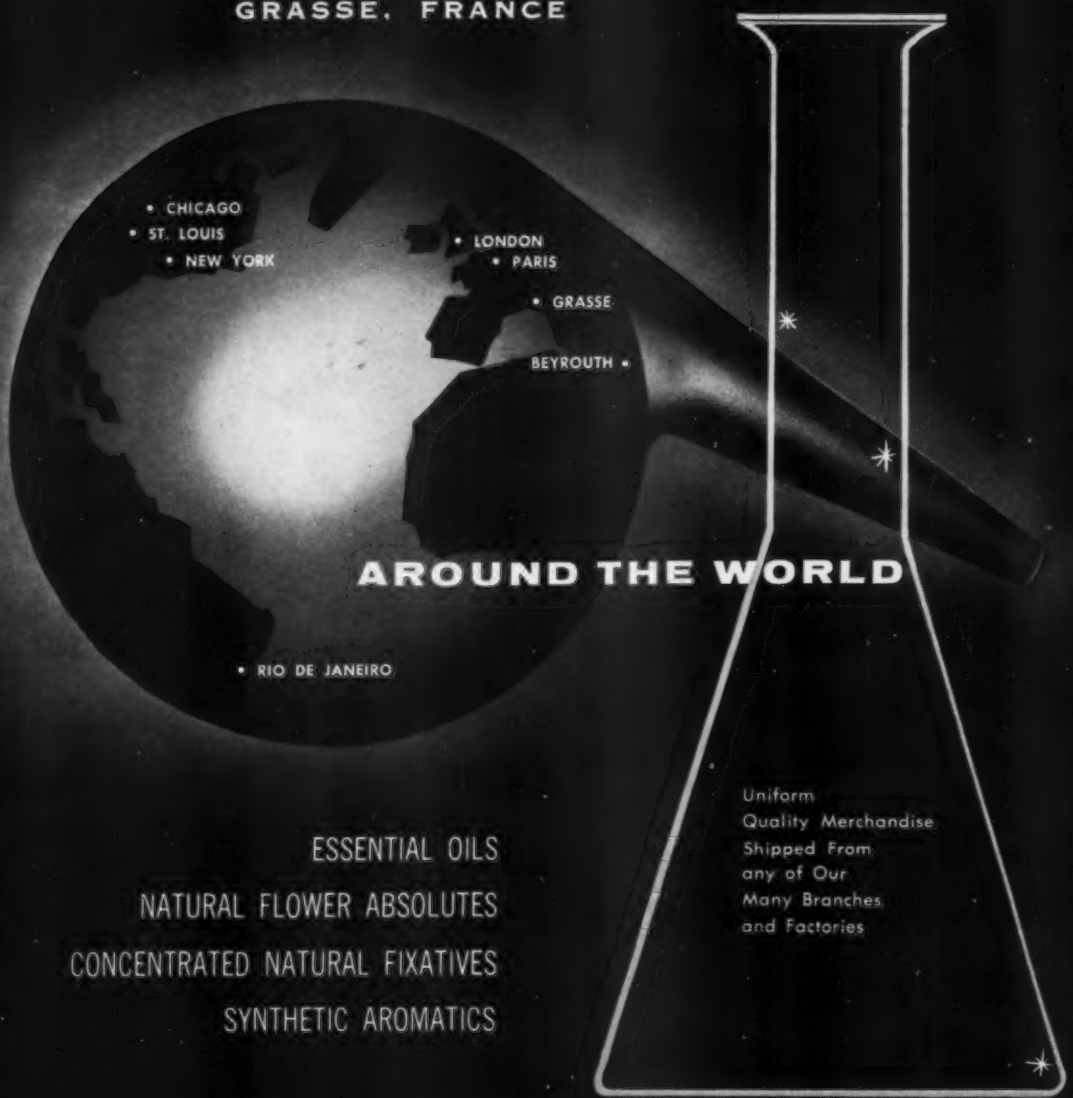

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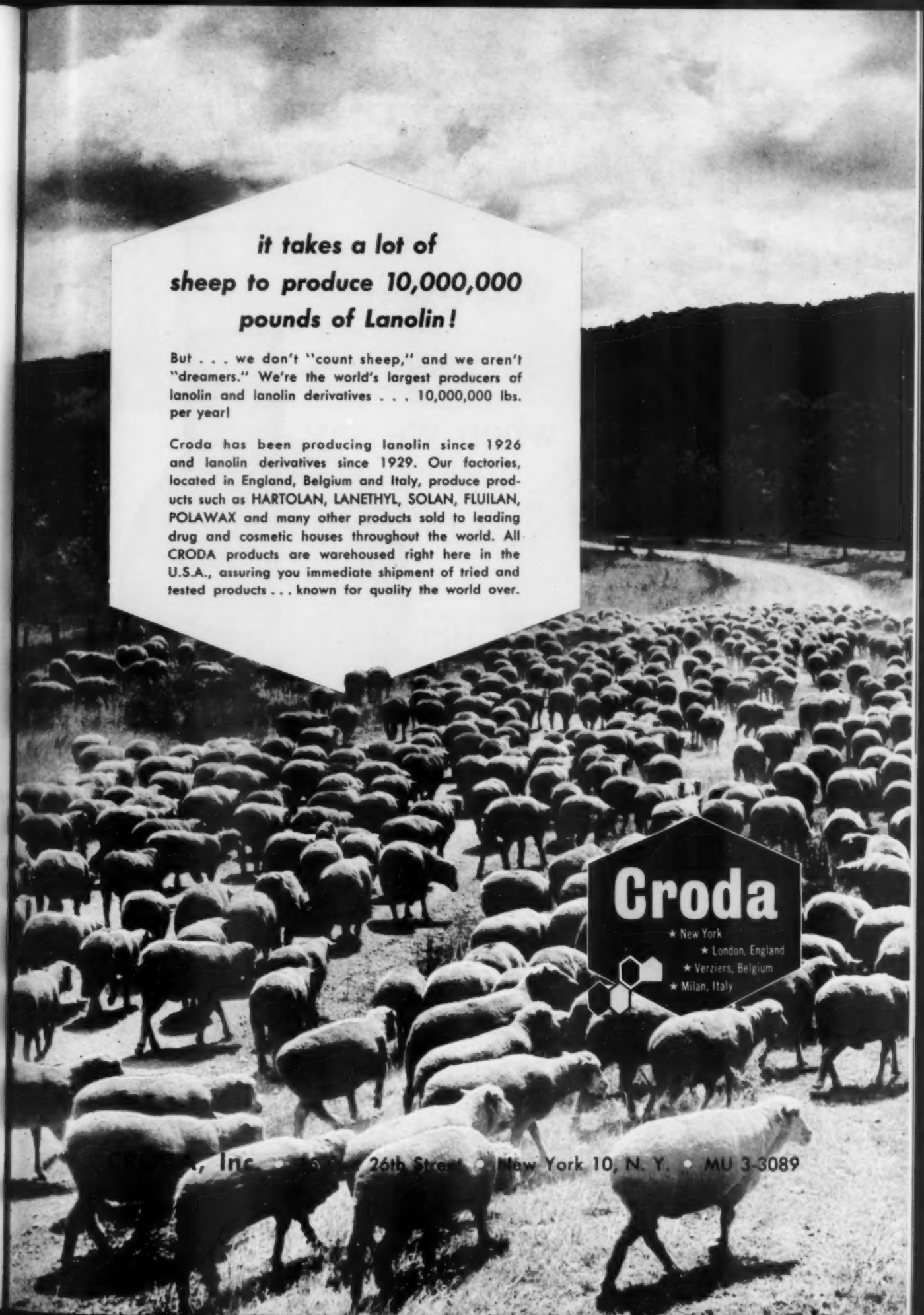
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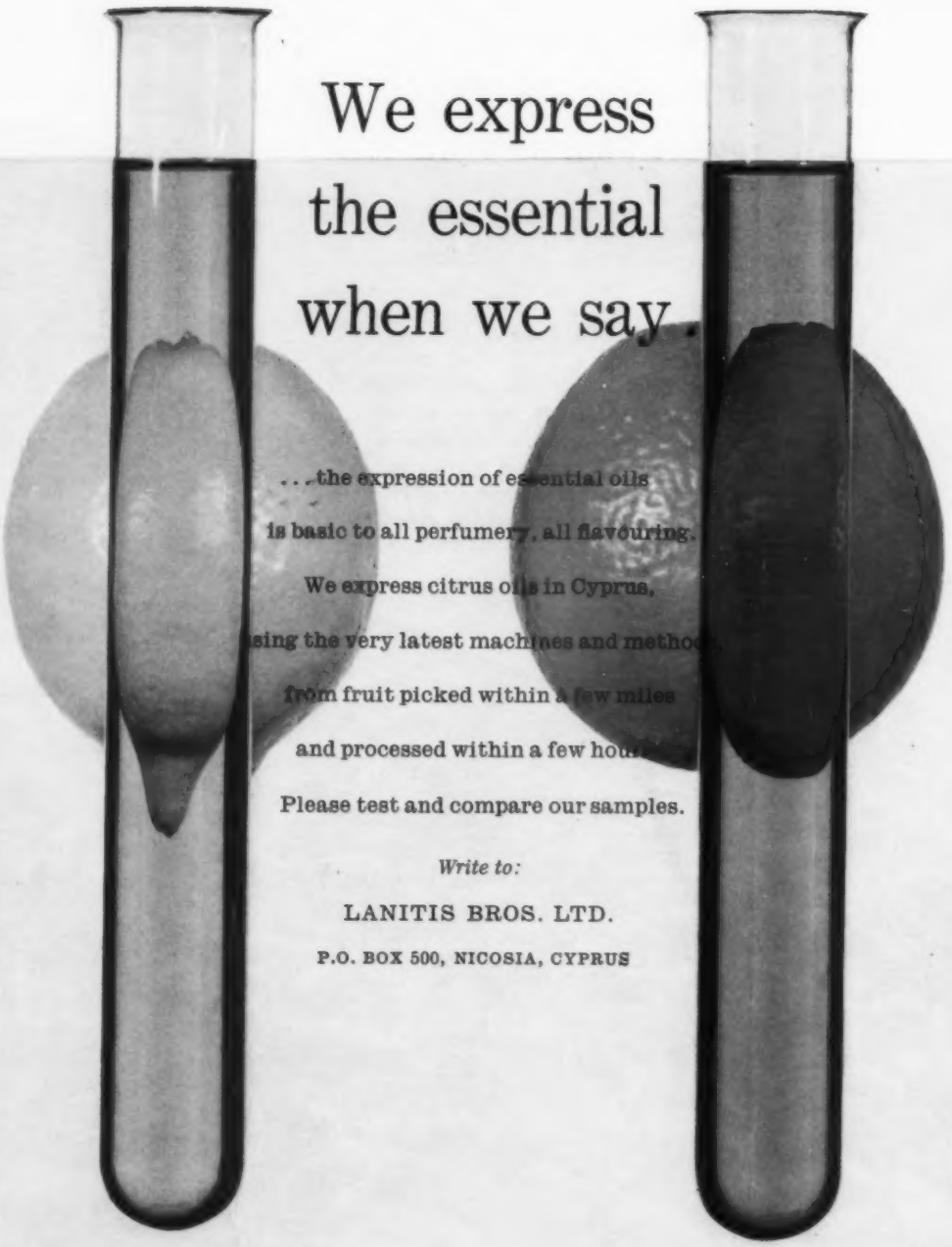

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Aloe Vera Gel

In Dermatological Preparations

JANICE FLAGG*

DOWN THROUGH THE AGES primeval healing practices involved the use of this amazing tropical plant. It is mentioned in the Bible and throughout ancient history as far back as the second Chinese Dynasty. Recent research into ancient history has disclosed the long-suspected fact that our early Egyptian Civilizations used Aloe vera for beautifying and preserving the skin.

The Aloe vera is native to south Florida and other tropical regions of the world. It is grown fairly extensively as a decorative plant in both Florida and California. In Cuba it is common in cultivation; in the Philippines it is grown in gardens—its wonderful healing powers have long been known to Philippine herb doctors, as they have been known and used for centuries in Malaya, Java, East and Southeast Africa, the West Indies, Sicily, Malta—in the warmer, drier regions of Tunisia, India and on the Island of Barbadoes. But, nowhere, to our knowledge, is the Aloe vera cultivated to the lush stage of maturity reached in private groves of Fort Lauderdale.[1]

The cultivation is comparatively easy and inexpensive. It requires a dry, chalky soil and is propagated by cuttings from older plants. Aloe vera produces a short stem and a rosette of leaves; after the rains it sends up a flowering stem which divides into several branches. If plants are propagated by these seeds, care must be taken to water them very lightly at the end of germination. Better results are obtained by the use of cuttings, planted about 1'5" apart in rows about 2'5" apart. Cuttings are planted after the spring rains, while the soil is still moist, but becoming warm. Aloe vera is succulent and mucilaginous; the greater part of the leaf tissue contains none of the medicinally active substance. (Continued ►)

*Aloe Creme Laboratories, Inc.
Fort Lauderdale, Florida

Initial extraction of "gel" from the Aloe Vera leaf.

There is much mysticism and folklore surrounding Aloe vera and its amazing healing properties—its uses are many and varied. It has been used for coughs; for all sorts of complaints of the intestinal tract; for healing burns—and is even placed upon the forehead for headaches. Our own Seminole Indians used the healing gel of Aloe vera in their surgery—which was performed out-of-doors. A leaf from the Aloe vera plant was applied to the incision; secured there and the wound healed. Aloe vera has been called the "plant that never dies" —because, in transplanting, while the plant may appear to be about dead, the roots are feeding on the life-giving gel of the Aloe vera until the root system is established —then the plant flourishes. It has been called the "Diety" plant and, of course, "Nature's Miracle Plant."

The stiff pointed leaves contain the gel or healing substance. This gel is so transparent that a newspaper can be read through it. When frozen it turns a reddish color—not unlike clear raspberry or cherry gelatin dessert.

Several large hospitals throughout the country, including New York City's Bellevue, have tested Aloe vera gel in the treatment of x-ray and radiation reaction. Results were remarkably successful, but hope for using the gel on a large scale was abandoned, because the gel apparently defied stabilization. Several large pharmaceutical houses also, are reported to have made costly though futile attempts toward stabilizing the gel in an ointment, or medication.

Today, this challenge has been met and dealt with . . . the wonderful healing gel of the Aloe vera plant has been successfully incorporated in highly effective medications, excellent suntan preparations—and an outstanding line of cosmetics.

This great achievement, destined to benefit mankind, was accomplished primarily through the perseverance, diligence and dedication of Stockton.[2]

In 1942, Stockton vacationed in Miami Beach where he experienced a severe sunburn. A severe sunburn can be a very damaging and painful thing. He visited several doctors to no avail. He returned to Chicago and learned that there was nothing available—no known medication for healing the damaged tissue caused by severe sunburn—only petrolatum based ointments, menthol lotions and creams to ease the pain temporarily.

Stockton was convinced that there must be an answer; that just as the quinine tree was found where the ravages of malaria were the worst; so would an effective medication for sunburn be found in the tropics. And he had heard rumors about the healing powers of the Aloe vera plant.

In 1947 Stockton moved to Florida permanently. He was familiar with stabilization problems; his experience as chemical engineer had brought him close to such issues. He did much library research on Aloe vera—he uncovered facts, legends, unbelievable claims, miracle stories and strange truths. He learned that down through the centuries, to our present day, the Aloe vera plant is used by many, many people. They drink it in water for arthritis, rheumatism and stomach ulcers; they apply the gel to cuts, burns, scratches, skin irritations—insect bites.

In 1953, after several years of research and clinical testing, the first company to successfully stabilize the precious gel of the Aloe vera plant in an ointment for public consumption, was incorporated in Florida.[1]

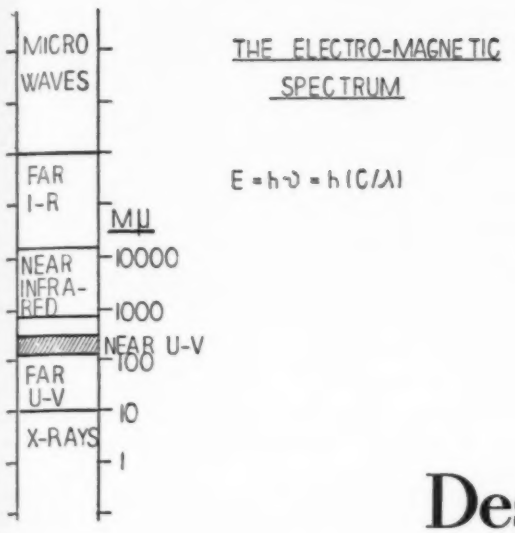
Clinical testing was furthered at the Clearing Industrial Emergency Hospital in Chicago under the direction of well known burn specialist, Dr. Roger Poborsky. The ointment proved to be 50% more effective than the three best known medications for burn therapy. The Armed Forces of the United States Government have also carried out extensive research on Aloe vera gel to further determine its effectiveness in the treatment of radiation reactions.

In the manufacturing and processing of the Aloe vera gel, the leaves of the plant are wrapped and delivered by refrigerator truck to the manufacturer's plant. There, the gel is drained out of leaves approximately 1 inch thick and weighing not less than 1 pound. Much of the precious gel is wasted in this initial process due to carefully avoiding contamination from undesirable chemicals contained in the green rind. The extracted gel is then put under precisely controlled temperatures.

There are millions of tiny cells throughout the gel, which holds the crystal clear liquid. It is necessary to puncture these cells to extract

(Continued on page 61)

Present products of Aloe Creme Laboratories, Inc.



THE ELECTRO-MAGNETIC SPECTRUM

$E = h\nu = h(C/\lambda)$

Design of Cosmetic Sun Screens

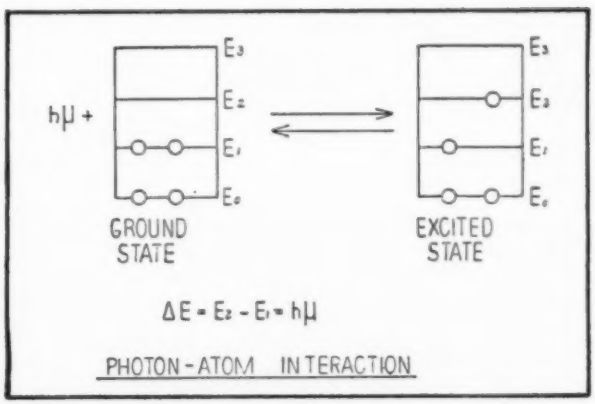
Saul I. Kreps*

WITHIN THE last two decades our knowledge of ultraviolet screens has made it possible to offer to the public suntan preparations which will effectively prevent painful sunburn and at the same time permit adequate tanning. Any material exposed to radiant energy will absorb, reflect or transmit that energy to a varying degree which depends upon both the nature of the incident energy and the nature of the material. It is the function of the cosmetic sun screen to absorb as completely as possible the sun's erythematogenic ultraviolet radiation while it transmits a maximum of all the other wavelengths of the sun's radiation. Very few chemicals come close to meeting this ideal situation.

Radiant energy is classified in a broad electromagnetic spectrum. Perhaps the simplest way of considering this energy is that in the absence of matter it is propagated as a wave form. But when it is absorbed it is in the form of discrete packets—photons—whose energy is a function of the wavelength of the wave form. The relationship between energy and wavelength is expressed by the general equation

$$E = h_\nu = h(c/\lambda) \qquad (1)$$

where
E = energy in ergs
h = Plank's constant, 6.6242×10^{-27} erg-second
ν = frequency, per second
λ = wavelength, centimeters, and
c = velocity of electromagnetic radiation, 3×10^{-10} cm./sec.



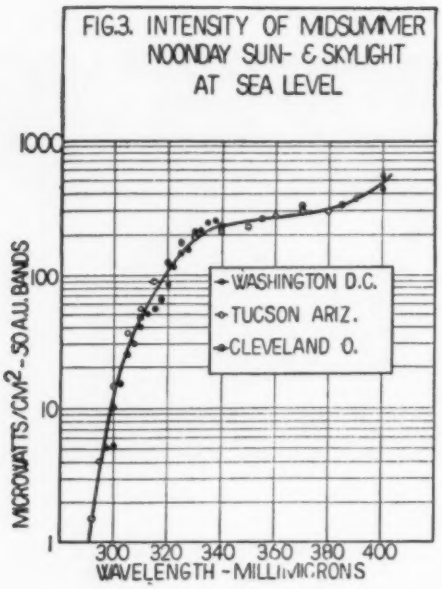
When atoms are excited by heat or electrical energy their electrons are raised through one or more steps of a possible series of energy levels, E_1, E_2, E_3, etc., which may be stable, or may revert to a lower level, or even to the ground state with liberation of the absorbed energy. For every drop in energy level, the difference in the energy content of the atom is in the form of monochromatic radiation of frequency such that, for a drop from E_2 *to* E_1

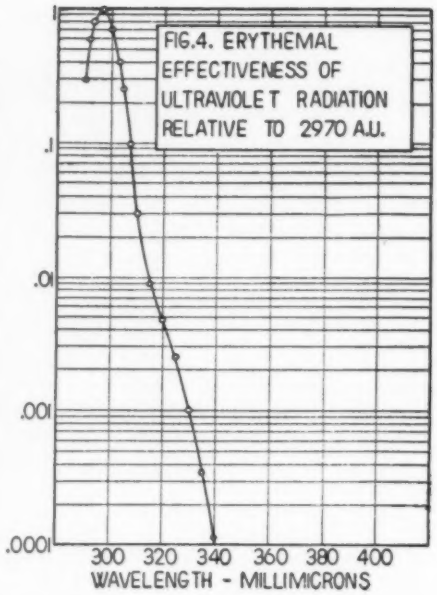
$$\Delta E = E_2 - E_1 = h_\nu \qquad (2)$$

This radiation forms the *emission spectrum* of the atoms characteristically shown in an electric arc or in a flame test.

When light passes through an absorbing medium, the reverse process takes place: the energy is absorbed and results in raising the energy levels of the electrons in

* Van Dyk & Co., Inc., Belleville, N. J.
Reprinted from the Journal of the Society of Cosmetic Chemists, Vol. 10, No. 2, 1959





the absorbing medium. This absorption of specific frequencies causes gaps to appear in the spectrum of the original light source which are shown as dark absorption lines at those wavelengths which are absorbed:

$$\Delta E = E_1 - E_2 = h(c/\lambda) \qquad (3)$$

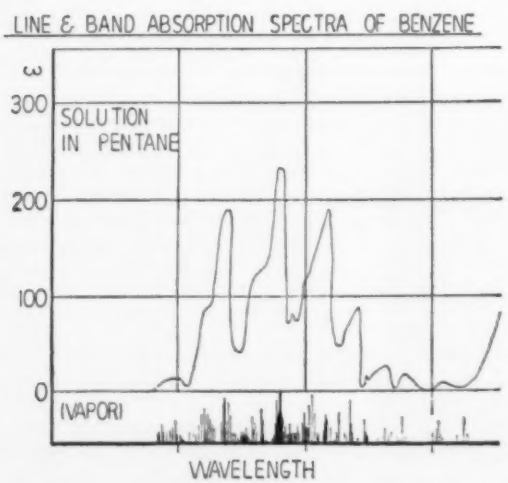
The absorption of energy by molecules is more complex than atomic absorption, especially if the molecules are in the condensed liquid or solid states, or in solution. The total energy content of a molecule is made up of electronic bonding energy and kinetic energy. The latter has both vibrational and rotational components:

$$E = E_{\text{bonding}} + (E_{\text{vibrational}} + E_{\text{rotational}}) \qquad (4)$$

$E_{\text{TOTAL}} = E_{\text{BONDING}} + (E_{\text{VIBRATIONAL}} + E_{\text{ROTATIONAL}})$

ENERGY	KCAL/GM-MOLE	RADIATION
BONDING	200	FAR U-V
	100	NEAR U-V
	50	VISIBLE
VIBRATIONAL	5	NEAR I-R
ROTATIONAL	0.5	FAR I-R

Quantitatively, the electronic bonding energies are the largest, and the vibrational energies are greater than the rotational energies. Thus bonding energies are associated with absorption bonds in the ultraviolet and visible regions (200 kcal./mole in the far ultraviolet, 100 kcal./mole in the near ultraviolet, 50 kcal./mole in the visible range. Vibrational changes are of the order of 5 kcal./mole, in the near infrared, and rotational changes are of the order of 0.5 kcal./mole, in the far infrared.



It is important to note that absorption can take place only if the photon corresponds to the difference in energy between two possible energy levels of the molecule. The change from one such permissible level to the other is termed an *electronic* transition.

Each transition gives rise to an absorption line of very narrow, though finite, width; and for each such electronic transition, there is a progression of closely spaced absorption lines corresponding to different possible combinations of vibrational and rotational levels belonging to the same two electronic levels. In complex molecules, the number of possible combinations of vibrational and rotational levels are so great that the linear fine structure is blurred. In solutions, and in the condensed states, vibrations and rotations are blurred still further by solute-solvent interactions and by molecular association of the close-packed molecules. This gives rise to a diffuse absorption and which is observed in place of the system of discrete absorption lines.

WAVELENGTH-MU	ENERGY-KCAL/GM-MOLE
280	103.2
290	99.4
297.5	96.4
315	91.4
320	90.4

Braude (1) points out that the absorption maximum for a given molecule corresponds to the most probable transition, and the value of $\lambda_{max.}$ is one of the most characteristic parts of the absorption curve. For a cosmetic sun screen, the location of the absorption maximum should therefore correspond to those wavelengths of sunlight which have a major erythemal effect on human skin. Solar radiation is known to extend in a continuous band throughout the entire electromagnetic spectrum. Were it not for the absorption of the lower wavelengths by our atmosphere, which absorbs virtually all radiation of wavelengths shorter than 290 millimicrons ($m\mu$), it is doubtful that life, at least as we know it, would have been possible on Earth. At any rate, the major erythemal wavelengths penetrating the atmosphere to sea level extend from about 290 to 315 $m\mu$.

From equation 1 it is calculable that these wavelengths correspond to transition energies of 91.4 to 99.4 kcal./gm.-mole. At the wavelength of maximum erythemal effectiveness, 297.5 $m\mu$, the corresponding transition energy is 96.9 kcal./gm.-mole. A transition with ΔE of 90.4 kcal./gm.-mole will have an absorption maximum at 320 $m\mu$, a region where absorption is undesirable because it impedes tanning. At the other end of the erythemal range, a transition energy of 103.2 kcal./gm.-mole results in an absorption maximum at 280 $m\mu$, too low to be cosmetically useful.

It becomes apparent from these figures that the allowable transitions that will result in a useful cosmetic sun screening fall within an exceedingly narrow range of energy requirements. It is not surprising then that few molecular species have been found which will serve satisfactorily as screens for human use.

The extent of the absorption of any particular wavelength depends further on the molecular geometry of the molecules. The quantitative measure of completeness of absorption is given by the molecular extinction coefficient, $\epsilon_{max.}$, which is defined by the equation:

$$\epsilon_{max.} = (O.D./cl) = (100/\%T)/cl) \qquad (5)$$

where
$O.D.$ = optical density = log $(100/\%T)$
$\%T$ = per cent transmission
c = concentration of the screen, gm.-moles/liter, and
l = thickness of the absorbing layer, in centimeters.

The value of $\epsilon_{max.}$ is as characteristic of a molecular species as is the value of $\lambda_{max.}$.

The absorption coefficient, $\epsilon_{max.}$, is determined by the transition probability, in the statistical sense. That is: when a photon of radiant energy strikes a molecule, what is the statistical probability of absorption of the photon? This transition probability is given approximately by Braude (1) as

$$P = 6.9 \times 10^{3}\, \epsilon_{max.}/N \times a = 1.5 \times 10^{-20} \times \epsilon_{max}/a \qquad (6)$$

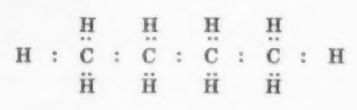
where
N = the Avogadro number, 6.06×10^{23}, and
a = the chromophore area, centimeters squared.

The chromophore area is that part of the molecule within which a given photon must strike in order that interaction and absorption shall occur. In complex molecules this area is generally much smaller than the total cross-sectional area, and includes only those atoms and bonds which are concerned in the transition.

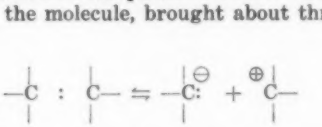
The values of $\epsilon_{max.}$ for high intensity electronic bands are of the order of 10^4 to 10^5, and chromophore areas of the order of 10^{-15} to 10^{-16} cm.^{2}, or 1 to 10 square Angstrom units. This corresponds to transition probabilities of approximately unity. In such a case it is said that the transition is *allowed* and occurs whenever a photon of the proper energy strikes the appropriate part of the molecule.

In order to use these generalizations in the design of new sun screening compounds, it would be necessary to predict the transition energies associated with specific atomic and molecular groupings. An approach to this can be made through our knowledge of the electronic structures of organic compounds.

Mineral oils have from time to time been used as sun screens. These oils are predominantly saturated paraffin hydrocarbons. The electronic bonds in such compounds are formed by pairs of electrons in covalent bonds. For example in butane:



The absorption of energy in the erythemal range is known to involve electronic shifts. The most probable shifts in saturated compounds involve the complete ionization of the molecule, brought about through bond rupture:

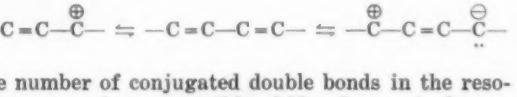


The probability of such an ionization is extremely small, and we find that extinction coefficients for hydrocarbons in the near ultraviolet and the visible range are close to zero. These transitions are not allowed by the molecular structure. This class of compounds does not absorb in the erythemal range, and whatever doubtful value they may have cannot be due to their sun screening activity.

For unsaturated compounds, another type of electronic transition is possible. One pair of the two pairs of electrons forming the double bond may resonate between two possible structures:

This type of transition requires about 170 kcal./gm.-mole for a single olefinic group, and corresponds to an absorption at 170 $m\mu$, in the far ultraviolet. At this point the $\epsilon_{max.}$ is high and the transition probability is about 1.0.

As the unsaturated structures increase in length, i.e., there are greater numbers of unsaturated bonds in the molecule, the ionic and homopolar resonance structures contribute more and more to both the ground state and excited states of the molecule. This results in the lowering of the potential energy levels of both the ground and the excited states with respect to the unconjugated system. But since the contribution of resonance structures is greater in the excited than in the ground state, the energy level of the former is lowered more than that of the latter. The transition energy therefore is reduced and the absorption bands are displaced to longer wavelengths (bathochromic shift).



As the number of conjugated double bonds in the resonating system increases, this shift of $\epsilon_{ma.x}$ to longer wavelengths continues, as shown in Table 1.

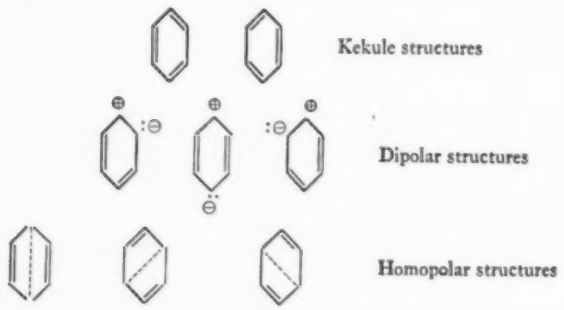
TABLE 1—ABSORPTION MAXIMA OF CONJUGATED UNSATURATES OF THE SERIES $(-C=C-)_n$

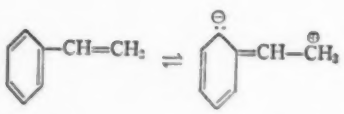
n	$\lambda_{max.}$	$\epsilon_{max.}$	Color
1	170.0	15,000	Colorless
2	217.0	21,000	Colorless
3	258.0	35,000	Colorless
4	310.0	42,000	Pale Yellow
5	328.0	51,000	Yellow (Vitamin A)
11	472.0	170,000	Red
15	528.0	150,000	Violet

The instability of the conjugated polyolefins toward oxidation and polymerization makes them unsuitable for use as sun screens. However, the aromatic compounds constitute a very stable series of conjugated double bond structures. The conjugated system of alternating single and double bonds permit resonance structures to contribute largely to the molecular structure. For benzene there are a large number of possibilities shown on the next page.

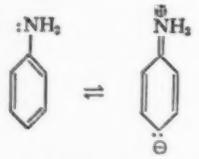
For benzene, $\lambda_{max.}$ for the polar structures occurs at 180 $m\mu$ and at 200 $m\mu$, in the far untraviolet.

As the length of the resonating structures is increased, again there is an increase in $\lambda_{max.}$. This may be accomplished by such structures as styrene. Styrene shows maximum absorption at 244 mμ.

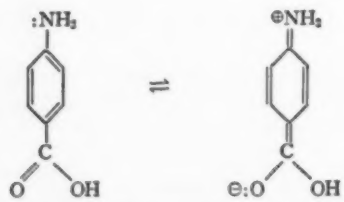




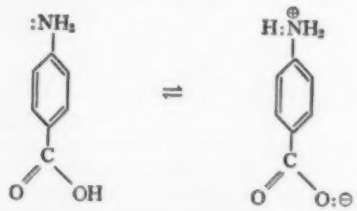
The addition of certain other groups to the benzene ring also results in increasing resonance possibilities. Thus the substitution of an amino group for a hydrogen also has a bathochromic effect. Amiline has its absorption maximum at 230 mμ.



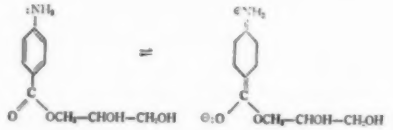
Further lengthening of the chromophore results in materials useful as cosmetic sun screens. The introduction of a carboxyllic group para to the amino group in aniline shifts the absorption maximum to 290.0 mμ.



In this case, the contribution of the indicated transition is not a maximum because of the competing contributions of other, more probable structures:

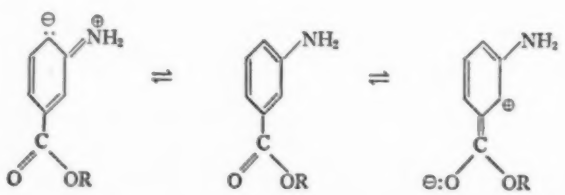


This ionization prevents the desired transition by bonding the unshared electron pair of the nitrogen atom in the ammonium ion, so that the quinoidal resonance structure cannot be formed. Thus, PABA is a relatively poor sun screen, and the absorption coefficient is low. However, when ionization is prevented by esterification of the carboxyllic group, the quinoidal resonance is no longer impeded. The major electronic transition in glyceryl-*p*-aminobenzoate is shown in the following scheme.



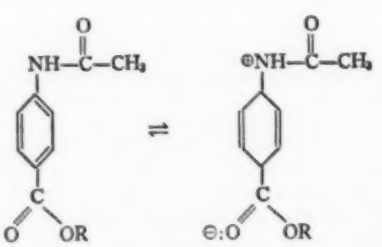
Here the absorption maximum is at 297.5 mμ, which corresponds exactly to the erythematogenic maximum of sunlight. To compare effectiveness, more than a 15 per cent concentration of PABA is required to equal the screening efficiency of 2 per cent glyceryl-*p*-aminobenzoate.

The relative positions of the polar groupings in the molecule greatly affect the energy and efficiency relationships. A change from the para to the ortho isomer in aminobenzoate esters results in a decrease in the chromophore cross-sectional area. Because of this the ortho isomers (anthranilates) are much weaker absorbers than the corresponding *p*-aminobenzoates. When the meta-aminobenzoate is tested, it is found that the peak absorption has shifted to lower wavelengths, and that the material is a very weak absorber. This is a consequence of the structure: electronic shifts involving both polar groups are not readily possible in the meta isomer since they are located at nonconjugating positions in the molecule below.



This transition is similar to that of the simple benzoate esters, and to aniline. These considerations lead to the conclusion that the para isomers afford the optimum cosmetic screen.

Substitutions of various groups on the amino radical of the para aminobenzoates lead to considerable modification of the transition possibilities, and hence change the screening characteristics of the original chomophore. Acetylation of the amino radical greatly reduces the basic character of the nitrogen atom and hence decreases its electron-releasing tendencies. Thus the probability of the transition



is smaller than that in the parent free amine, and requires greater energy. As a result, the absorption maximum is lowered from 297.5 mμ to about 270 mμ,

(Continued on page 52)

COLDPRESSED ORANGE OIL

PHYSICOCHEMICAL PROCEDURE TO DETERMINE ORIGIN AND METHOD OF EXTRACTION*

Examination of the physicochemical properties of coldpressed orange oils have revealed differences in the ultraviolet spectra and in the evaporative residues of the oils that reflect the geographical source of the oil and the method by which it was extracted. Taken together these tests offer a quick and accurate means by which the method of extraction and geographical origin may be determined. It is anticipated that the method will be useful to the Essential Oil Industry.

J. W. KESTERSON, R. HENDRICKSON AND G. J. EDWARDS

Methods

Coldpressed orange oil samples were secured from commercial plants that utilize the screw press, Pipkin roll, and FMC In-Line extractors previously described by Kesterson and Hendrickson (2, 3). The samples obtained by the screw press and FMC In-Line extractor processes were taken from 30,000-pound lots of oil, which approximates the amount of oil recovered from 220,000 field boxes of fruit. The total quantity of oil from which the Pipkin roll samples were taken is unknown, but the samples were typical of oil obtained by this process. Oil samples used in this study were of excellent quality and representative of pure coldpressed orange oil produced in Florida.

Evaporative residues were determined in accordance with the procedures given by Guenther (1). Ultraviolet absorption data were secured in accordance with the procedure of Sale, et al. (4). A Beckman Model DU quartz spectrophotometer with hydrogen lamp attachment and a dilution of 0.25 g. oil in 100 ml. of 95 percent ethanol were used. The orange oil samples were evaluated in a 10 mm. silica-absorption cell.

J. W. Kesterson

G. J. Edwards

R. Hendrickson

Aerial view of Citrus experiment station.

Experimental Results

The spectrophotometric analyses and evaporative residues for screw press, FMC In-Line extractor, Pipkin roll, and California orange oils are shown in Table 1. Since our analyses of coldpressed California orange oil were, unfortunately, limited to a few samples, we obtained data from commercial analyses of 27 lots of California oil for comparison; these commercial analyses were of samples collected from 1953 to 1958. The data are summarized in Table 2, on page 52.

(Continued on next page)

*Florida Agricultural Experiment Stations Journal Series, No. 927.

Table 1. Spectrophotometric analyses and evaporative residue values for coldpressed orange oils.

	U. V. Spectrum 330 mu log E 0.25 g. 100 ml.											
	Screw Press			FMC In-Line Extractor			Pipkin roll			California		
	CD	Peak	Evap. Res. %	CD	Peak	Evap. Res. %	CD	Peak	Evap. Res. %	CD	Peak	Evap. Res. %
	1956-57 Season											
	0.34	0.56	1.52	0.25	0.47	2.49	—	—	—	—	—	—
	0.26	0.44	1.59	0.29	0.51	1.96	—	—	—	—	—	—
	0.25	0.44	1.74	0.28	0.42	2.29	—	—	—	—	—	—
	0.30	0.52	1.72	0.23	0.44	2.78	0.42	0.68	1.79	—	—	—
	1957-58 Season											
	0.22	0.40	1.35	—	—	—	0.45	0.72	1.74	—	—	—
	0.21	0.39	1.20	0.22	0.43	2.95	0.45	0.69	1.29	—	—	—
	0.28	0.49	1.50	0.30	0.53	2.42	0.53	0.85	2.48	—	—	—
	0.28	0.50	1.85	0.24	0.45	2.52	0.45	0.72	1.72	0.14	0.32	2.80
	1958-59 Season											
	0.35	0.62	1.70	0.27	0.51	2.40	0.42	0.68	1.57	0.14	0.34	3.32
	0.24	0.44	1.87	0.27	0.52	2.81	0.46	0.74	1.92	0.16	0.37	3.78
	0.28	0.48	1.83	0.34	0.58	2.56	0.50	0.79	1.53	0.13	0.32	3.90
	0.29	0.50	1.88	0.39	0.67	3.35	0.52	0.82	1.61	0.14	0.35	4.00
Max.	0.35	0.62	1.88	0.39	0.67	3.35	0.53	0.85	2.48	0.16	0.37	4.00
Min.	0.21	0.39	1.20	0.22	0.43	1.96	0.42	0.68	1.29	0.13	0.32	2.80
Avg.	0.28	0.48	1.65	0.28	0.51	2.59	0.47	0.74	1.74	0.14	0.34	3.56

Discussion of Results

Orange oil samples used in this study were produced from early season, mid-season, and late season fruit. Early season oil was produced from mixtures of Hamlin and Parson Brown fruit. The mid-season oil was produced primarily from Pineapple oranges and the late season oil from Valencia fruit. Data presented in Table 1 shows that, for any one process, the variety of fruit from which the oil was made seemed to have no direct relationship to CD values.

The physical and chemical characteristics such as specific gravity, refractive index, and optical rotation of the original oils and 10 percent distillates, and aldehyde content were determined for the screw press, FMC In-Line extractor, and Pipkin roll oils. These values were not reported since they were similar to previously reported (2, 3) analyses.

The California orange oils used were commercial samples and represent different bulkings of oil. We have no means of ascertaining when the oils were produced or by what method they were manufactured. It is conceivable that these bulkings contained both early and late production oil as well as blends of oil made by different processing methods. Different processes might possibly give oils with different values for CD and evaporative residue, but our analyses were for blended oils and there is no way to determine the effect of this variable. The data in Table 2 are in agreement with those obtained for the California oils (Table 1). There is a slight difference in the point at which the peak absorptions occurred. This difference could be due to the instrument or operator involved in making the determination and is considered to be of no consequence.

On the basis of data presented (Table 1), it seems logical that the following criteria could be used as a basis to identify and characterize coldpressed orange oils:

Type oil	CD	Evaporative residue
California	0.10 to 0.20	not significant
Florida:		
Screw Press	0.20 to 0.40	below 2%
FMC	0.20 to 0.40	above 2%
Pipkin roll	0.40 to 0.60	not significant

(Continued on page 52)

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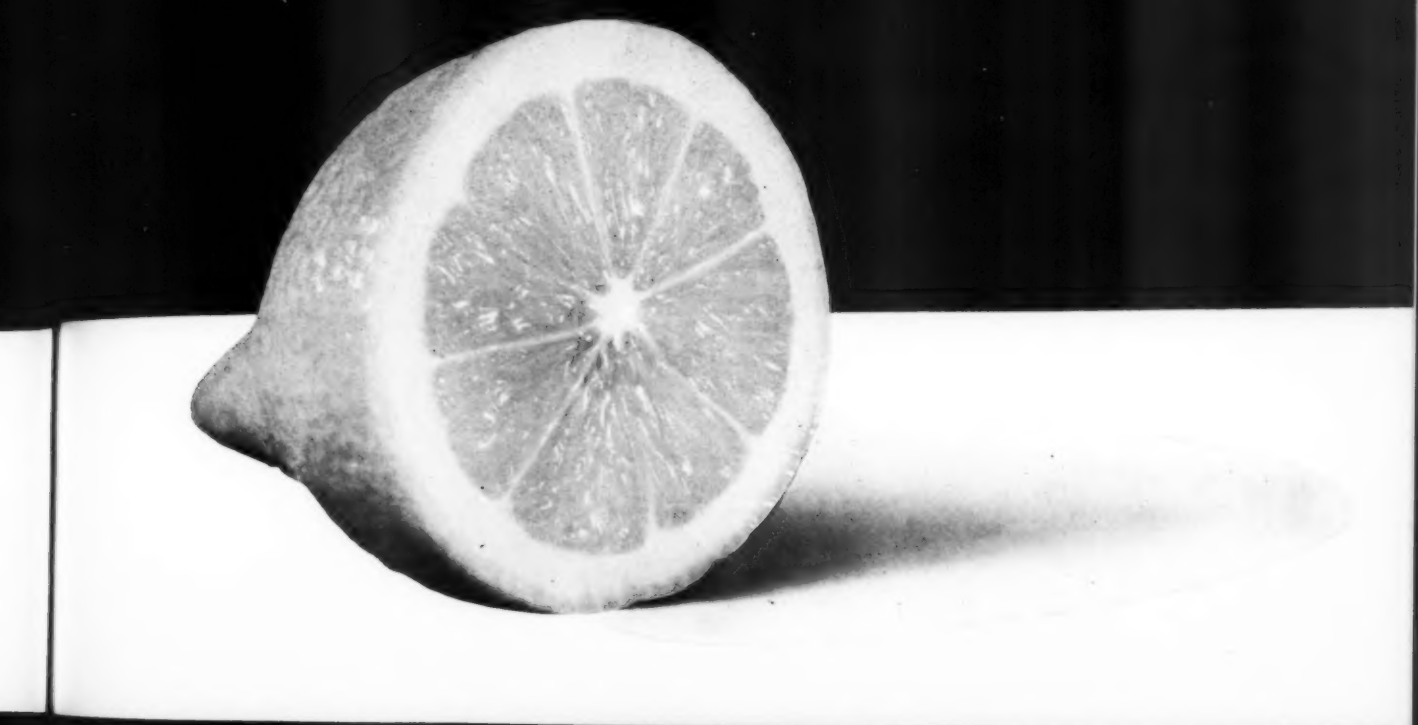

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THE DERMATOLOGIST,

The Older Woman and Cosmetics

ALICE E. PALMER, M.D.*

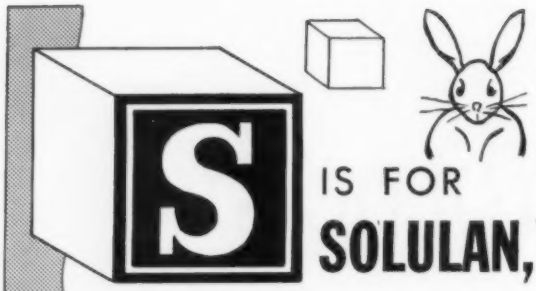
In this era, where the average life span has been increased, it is interesting to speculate on whether we end up just working with inevitable age changes or whether we can eventually slow the process. To date, our task centers chiefly on keeping lives attractive, nonaggravated, useful and acceptable to others.

From the point of view of the practice of dermatology, we contend with certain developments which are concomitants of the aging process. To this end, the dermatologist and the cosmetic chemist are working together in trying to slow these aging processes, and of trying to improve people's appearance, morale and comfort. But actually, basic scientists have not yet agreed on exactly when aging changes can be detected. Bean (1), in his study on cutaneous vascular changes, stated that vascular lesions as spider nevi, telangiectases of Dubrueihl and venous lakes become more numerous, and larger, with advancing age. But he added that there definitely cannot be established a real correlation between age as such and the number and size of these lesions. Such factors as heredity, liver function and hormonal status of the person were more important. And while Reizenstein (2) long ago stated that atrophy of the skin can be detected between 26 and 28 years, Goldzieher (3) concluded that atrophy of the skin is noticeable at 60 and pronounced at 70. He stated that atrophy corresponds roughly to a person's age and incidentally is not related to measured amounts of estrogen excretion. Schmidt (4) claimed that age changes begin at about age 40.

Wrinkles, loss of hair pigment and the loss of hair are signs of age. Our skin tells the world our physiologic age. In rats, the age of the animal can be rather sharply approximated by histologic studies of the skin. In aging, there is atrophy of the epidermis and a reduction in the number of cells. But we dermatologists feel that the epidermal changes are not of too great significance. Increasing the cell depth of the epidermis can be done in a variety of ways by vitamins, hormones, irritants and friction (5). It does not make the skin look any younger if the subepidermal elements have degenerated. Most of the serious age changes in the skin are in the elastic fibers (6). We do know (7) that such senile or degenerative changes in the elastic fibers can be brought about prematurely in unprotected areas of the skin by sun and wind over the years. Outwardly, the skin is leathery. In this sense, protective cosmetics at least can prevent premature aging. It is hoped that some protective cosmetic of the future can do something to prolong the youthful state of the elastic fiber.

Vohwinkel (8) stated that senile changes begin at about the fortieth year and involve the outer portion of the dermis first and work down, with elastic and collagen fiber changes resembling radiation change. It may be that many of our cutaneous changes are actually due to the constant radiation we receive all during our lives on this earth, from several natural sources. It has been

*Grace Hospital, Detroit 1, Mich.



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shown (9) that such natural radiation takes place all the time and that over a lifetime, we receive more radiation from these natural sources than we do from man-made radiation. In addition to these elastic and collagen fiber changes, there is definite shrinking and loss of activity in the sweat glands, the oil glands, the hair follicles, and in the cutaneous appendages, the hair and nails. The tiny blood vessels develop hardened walls; the rate and amount of circulation is lessened. The metabolic changes are reduced, the immunologic mechanism, the oil-sweat film on the surface, all are altered. There are marked differences in pigmentation, and pigmentary responses are changed. Due to the uneven lessening of all skin functions, it can be theorized that there will be overcompensation for the loss of function with resultant occasional overgrowth. This would partially explain the so-called "progressive changes" in a senile skin in the face of diffuse degenerative changes (10).

On gross inspection of the skin in aging, we see what are called senile freckles appearing on the tops of the hands, face and shoulders. Vascular lesions appear, and several types of localized thickenings called keratoses develop. The senile keratoses are thickenings involving squamous cells, are skin-colored, and appear in light-exposed areas. They occur most frequently in individuals who have a thin skin, with sandy complexion. They also occur in persons who have exposed their skin to light to an excessive degree. Repeated actinic exposure, such as sunbathing and repeated use of sun lamps, take their toll, beginning five to fifteen years later. The same condition is seen in persons who work with light-sensitizing chemicals.

Unfortunately, this state, to date, is not reversible, but requires constant medical attention to control the keratoses and their all too frequent further development into skin cancer.

The seborrhoeic keratosis occurs in areas where oil gland activity has been excessive. This is a soft, yellowish-brown, greasy scale, of varying size, which can be scraped off, leaving a moist surface. This lesion occurs about the hairline, on the face in front of the ears, and on the neck and trunk. In people who have a history of acne or seborrhea, we sometimes see almost innumerable seborrheic keratoses over the covered areas of the chest and back. These rarely become malignant, although they sometimes get quite large. They are unsightly and often create discomfort because they may itch a great deal.

The telangiectases of Dubrueihl are tufts of arteriolar capillaries, little red marks, either flat or elevated.

Cutaneous tags are skin-colored masses, usually attached by a pedicle, and look just like pieces of outgrowing skin.

Seborrheic warts are small sized filiform or sessile growths, either skin-colored or light brown, which usually grow on the neck and upper chest and axillae. They seem to be related to the sweat mechanism. They develop in "crops" and are seen often in women during pregnancy, or during any other major hormonal shift.

Another change sometimes seen with aging is the development of tiny yellow fat deposits in the skin, especially on the face. These act as local irritants and we sometimes see low-grade skin cancers developing in them. Another interesting phenomenon with age is a noticeable differentiation between the male and the female skin. In old men there is two to three times as much skin fat secretion as in old women. But there is no relation between fat secretion and the amount of clinical wrinkling. The only relationship is to the size and activity of the pores. Large pores just produce more oil (11).

Grossly, with age the hair becomes grayed, the skin looks a little dehydrated, pale and off color, the nails

become thick and sometimes horny. The cells of the skin which normally are being softened by sweat and oil even when being discarded become very dry. The skin develops a branny, fine, white scaling as a result. The completely keratinized cells of the nails do not fall off easily but are tightly and dryly adherent so that the nails are actually thicker. The decrease in appropriate amounts of fat and water accounts for some of the discoloration of the nails.

In the older person we are faced with some special conditions. One of these we call "lichenification." This is a circumscribed area of diffuse thickening due mainly to friction. Constant scratching, nervous mannerisms, repeated leaning on the same spots of skin—as on the elbows and knees—repeated rubbing, or spraying on of irritants, all give rise to this condition. Furthermore, the older person has a reduced oil barrier and becomes more sensitive to many agents, such as industrial and household chemicals, and cosmetics such as hair dyes, depilatories and deodorants.

Multiple etiologic factors influence the onset of aging. Environment is important in many ways. Weathering, by wind and by actinic rays, makes for a difference in quality of skin between a farm woman, or a golfer and the indoor type of person.

Heredity is also significant. Nutritional factors, internally speaking, are of the utmost importance. Vitamin deficiencies, shortages in proteins, water, fats and carbohydrates produce specific changes. The effect of each of the endocrine glands is profound, and in this field there is still much exploration to be done.

Disease of almost every type influences the condition of the skin. Cirrhosis of the liver, cholesterol imbalance, fevers and malignancies take their toll. We know that nail growth, as an example, is slowed in infectious diseases, as in mumps. Nail growth is actually stopped when an individual has a stroke with paralysis on one side. Actually, this fact was utilized long ago by physicians. When the nails began to grow on a paralyzed side, recovery of motion to varying degrees could be expected to follow (12).

Disease is not always of a purely physical nature. Of course, in discussing women we are not supposed to admit that they could be anything but all beauty and loveliness. When they are emotionally ill, we tend to soften the label by calling them "nervous." Hostility, hate, fear, selfishness, demand, whether for money, position or affection, lust and dishonesty do occur in women and are reflected in the expressions on their faces as well as in their general health. Many of the skin problems we as dermatologists have to treat are so-called "neurogenic" in origin. In my own practice this constitutes 66 per cent of the conditions we treat. This broad term actually is a kind word for unsolved emotional stresses, and, if we analyze these emotional stresses, they are in reality a personal conflict with one's own morals; a battle between "what I want" and "what I should."

Cosmetic Needs

Now I would like to say something about some cosmetic needs we have.

Proper cosmetic care actually means more than emphasis on vanity. It means good hygiene. But in general, I feel that, while it is certainly essential, most cosmetic efforts have been centered on the idea of adequate lubrication. Protection against undue water loss and protection against excessive heat loss are also important objectives. Good cosmetic care means an attempt at reversal or slowing of the changes which naturally develop with age and at prevention of the progression of these changes to their extremes. We cannot compare the care of living skin with the care of leather. We have to keep in mind that the cells of the skin are functioning protoplasm and are always in a state of change. Whatever is put on the skin must not plug up the sweat and oil ducts, and it must allow for gaseous, water and lipid interchange, while enhancing properties of flexibility and toughness (13).

One of the common problems which confronts the dermatologist is this plugging. Older women who use all the face cosmetic preparations available frequently develop multiple firm intracutaneous white papules called milia. These are simply due to plugged pores and they are not easy to clear up. Too frequent application of waxes is almost certain to produce this effect in many women.

Perhaps the commonest occasion where dermatologists become aware of the cosmetics field is in connection with allergic responses. In my own opinion, persons who have a problem with the sweat and oil mechanisms are more likely to have trouble with cosmetics. However, of the truly allergic responses we see, most of them would be attributable to coloring materials and metallic compounds. It is perhaps because of these occasional dermatitis cases that some physicians angrily tell patients to "throw away all cosmetics," without discrimination.

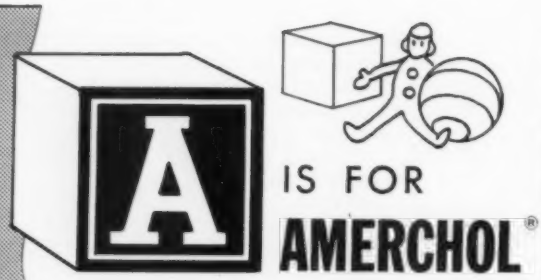
One of the most important needs in the field is the need to recognize differences in quality of the sweat. Underarm perspiration differs chemically from general body sweat. Sweat from the face is different from that of the feet. Sweat changes its chemistry in excessive heat. People with different personalities have different qualities to the sweat, and so do sick people. Many of our patients exhibit eruptions on the face which are, in truth, allergic responses to their own sweat as applied with pressure from their own hands. The chemistry of the sweat of the hands in a highly nervous woman is different from that encountered in the emotionally stable person. Profuse sweating in the scalp even increases the rapidity of hair loss in oncoming baldness.

I would like to see a series of antiperspirant cosmetics developed with these differences in mind, some to do one thing, some another. We need to neutralize palmar sweat or change the character of the sweat on some persons so that it is rendered noninjurious to the skin. We need to prepare lotions for the old, dry, cold skin, lotions which diffuse readily, are easily applied, and which lubricate. We also need preparations for the older person that will hold body heat in. We are not concerned so much with the sweating here because it is much reduced anyway. We need an anti-perspirant for certain scalps.

We need mildly keratolytic preparations for regular attention to the skin of the feet. We need good cosmetics for regular use which will protect against actinic radiation. We need new agents to protect against the excessive degreasing action of modern household chemicals. We need new thought given to nonirritating bleaching preparations for use on the skin, based on a knowledge of different types of hyperpigmentation, whether it be iron, melanin or hemoglobin derivatives.

As a dermatologist, I feel that cosmetic science has already contributed heavily. I know that cosmetic chemists are faced with special problems in the field of pseudo-medicinal agents. They have to avoid practicing medicine, yet we want many things from them.

Another group of items we need, and this despite all the recent efforts, is a series of shampoos. We need one that, when it removes oil from the hair, does not stimulate the skin to even greater oil production. All doctors are familiar with the patient for whom we prescribe an oil-removing shampoo because her hair gets oily by the



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fifth day—and after we have prescribed such a preparation, her hair is oily in two days.

I would like to see a line of preparations developed for the old skin for application to natural skin folds and to surfaces of skin which are in apposition. We need nonskid bath preparations for the older person who no longer is agile enough to feel safe in a bathtub. We need special softeners and antipruritics for this group. And in the selection of cosmetics, we need to remember that due to differences in vascularity, innervation and function, all the skin, even in the same individual, cannot be treated alike.

We desperately need a substance which will protect the face and neck during the hair-drying process. This blast of hot air over the cheeks and sides of the neck, in my opinion, causes definite premature aging changes along the sides of the neck.

I feel that the head and hands have received too much attention in proportion to the rest of the body. I would like to see more done for the feet; not just polish for toe nails, but skin and nail care. We need protectives for the ankles and heels, softeners, keratolytics and moisturizers. Due to our standing position, vascular problems and their sequelae develop as a result of gravity plus aging. Cutaneous problems develop in the legs likewise from the inadequate protection offered by the thin stockings women wear today, combined with the vascular compression of garters and girdles.

Personal Reflections

And now, I would like to present a few of my personal reflections on the entire subject we have been discussing. We doctors should not be cosmetics nihilists. Chemistry has given us tremendous benefits: wonderful shampoos, detergents, softeners, protectives, keratolytics, cleansers, tanning agents, depilatories, deodorants and dozens of others.

Many of my patients complain to me that some doctors they have seen have no use for the whole subject of cosmetics and tell them to "leave it all off." To me, this shows a lack of appreciation for the good that certain cosmetics actually do, as protection from water loss, from degreasing agents, from actinic rays, from friction and injury and from wind and chemicals. I feel that perhaps physicians are actually in subconscious revolt to two hackneyed phrases and all their connotations. One is "Keep the cash register ringing," where the implication is that the money motive necessarily excludes any service motive. The other is the unending monotony of description of "The beauty ritual." This phrase, I am sure, brings out latent hostility to women. The beauty ritual involves cleansing, lubricating, special creams by day and by night, special creams for the eyes and for the neck. Then there are hormones. There are masks too; different things to do to the eyes, the eyelashes, the eyebrows, the lips, the jaw-line, the finger nails and toe nails. Then there is the time spent on color selection, bleaching creams, foundations, powders, rouge, and a wide range of hair things. All this implies withdrawal of the female half of our population into complete self interest. It represents the tremendous demand which is in many American women: the demand to be alluring to every man. This is a thought which might give rise to some serious thinking. Could that fact alone account for the demand of our women for more money and for more time to spend on themselves; for the decreased respect of our women for our men—they are so sure of their universal appeal. And could this emphasis on universal appeal have a bearing on the number of broken homes we have? It certainly accounts for such

(Continued on page 46)

APPLICATION OF BACTERIOSTATS IN DETERGENTS

R. E. VICKLUND

Through the use of an appropriate bacteriostat in certain household laundry detergents, one can impart a degree of anti-bacterial activity to the laundered goods.

Conventional bacteriological test procedures, particularly the F. D. A. Agar Plate Method, have been adapted to measure the bacteriostatic activity of textiles. In this procedure, a sample of fabric is placed on the surface of a suitable agar medium which has been inoculated with the chosen test organism. Inhibitory activity is indicated by a clear zone of agar adjacent to, or beneath, the fabric sample. One can evaluate various bacteriostats by determining the minimum concentration which produces some inhibitory action.

It is obvious, however, that this inhibitory activity must be translated into practical advantages for the consumer and that test procedures more nearly simulating use conditions must be employed to assess the actual value of the bacteriostatic action.

One of the practical advantages afforded by a bacteriostatic detergent is improved control of perspiration odor which is known to be caused by bacterial degradation of sweat. One's clothing is probably a much greater offender in the body odor problem than many of us realize. I recall a series of deodorant tests which consisted essentially of having a group of human subjects wash their axillae daily with a deodorant soap after which they donned clean T-shirts to be worn throughout the day. At the end of each day, a panel of odor judges sniffed the auxillary area of each subject while the T-shirt was still on; then the shirt was removed and the judges sniffed the axillary skin directly as well as the shirt itself. In a number of cases, the axillary skin itself exhibited little or no odor, whereas the shirt gave a distinct, objectable perspiration odor. There were also cases where both shirt and skin were odor-free or both both exhibited objectionable odors. Both perspiration and bacteria will be transferred from the axilla to the surrounding clothing and odor development will ensue unless sufficient basteriostat migrates from the skin to the shirt. Subsequent tests using T-shirts impregnated with bacteriostats showed significant reductions in axillary odor development, particularly when the test subjects were using a deodorant soap.

While we are concerned here with imparting bacteriostatic activity to textiles by the laundry detergent, it should be noted that the textile manufacturers are utilizing bacteriostats in many clothing articles for odor control and sanitizing purposes. Poor laundry resistance of such treatments remains a major shortcoming and laundering with a bacteriostatic detergent should appreciably lengthen the effective life of the treatment.

The dry-cleaning industry is also examining the feasibility of using bacteriostats in their dry-cleaning solvents. Residual perspiration odor in wearing apparel that is dry-cleaned, is one of their major problems.

Bacterial growth in damp towels, wash clothes, soiled clothing in the laundry hamper, etc., frequently results in stale or sour odors, particularly in warm, humid weather. By incubating samples of moist, soiled toweling in a covered jar containing a little water, one can easily demonstrate a striking difference in the odor of samples washed with a bacteriostatic detergent and those washed with the detergent alone.

The objectionable odors described above are very tenacious and difficult to remove by laundering; in laundered wearing apparel, they are particularly noticeable during ironing.

Ammoniacal odors and dermatitis associated with baby diapers are also a result of bacterial decomposition and can be controlled by bacteriostatic treatment of the diapers. Majors recently presented a paper describing a procedure based on the determination of titratable acid or alkali produced by the growth of the test organism and held in the interstices of the test fabrics.

As a general sanitation measure, the use of bacteriostatic detergents is also indicated. Today our hospitals are plagued by antibiotic-resistant staphylococcic infections which are difficult to control. Certainly no single measure will solve this problem, but just as certainly, the use of effective bacteriostatic detergents in hospital laundries is indicated as a prophylactic procedure. It has been shown that the hospital laundry chute is a major source of "staph"[2], and further, that bacteriostats, such as hexachlorophene, are highly effective against these antibiotic-resistant organisms.[3]

In the interest of good health and personal hygiene, we should strive not only to be visually clean, but bacteriologically clean as well.

In addition to the purely functional characteristics of bacteriostatic detergents, several other factors must be considered in the evaluation of bacteriostats for laundry detergents. The bacteriostats are not equally effective and compatible in the various detergent formulations. For example, 0.25% of a bacteriostat in certain synthetic detergent formulation is effective, but as much as 2% of the same bacteriostat is required in a typical laundry soap product. In fact, considerable variation in activity is observed when a given bacteriostat is added to the various synthetic detergent formulations presently on the market.

Some bacteriostats may discolor certain types of fabrics, nylon for example, and the compatibility of the brightener and bacteriostat must be considered from this point of view.

Bleaching agents may also discolor bacteriostatically-treated fabrics and adversely affect their activity.

Concerning the bacteriostats themselves, it is interesting that most of those in use today are those proven most effective for antiseptic and deodorant toilet soaps; it seems essential in both applications that the active agent not only be highly bacteriostatic but exhibit low solubility in slightly alkaline solutions also. Another similarity is that three or four launderings with a bacteriostatic detergent is required to achieve maximum anti-bacterial activity; a build-up in the fabric is indicated, just as is known to occur in washing the skin with deodorant soaps. This parallelism, applied to the finding

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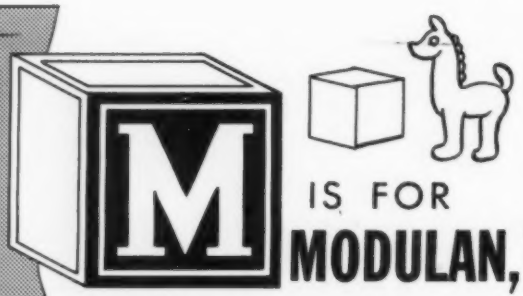

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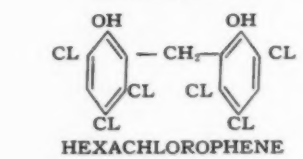
TABLE I
ANTI-BACTERIAL ACTIVITY OF LAUNDERED FABRICS

BACTERIOSTAT TESTED	CONCENTRATION (% by WEIGHT OF DETERGENT)	ZONE OF INHIBITION mm
HEXACHLOROPHENE	0.2	0.5
TRICHLOROCARBANILIDE	0.2	0.5
TETRACHLOROSALICYLANILIDE	0.2	Trace to 0.5
HEXACHLOROPHENE + TRICHLOROCARBANILIDE (Ratio-3-1)	0.1 0.05	1.0 - 1.5 Trace

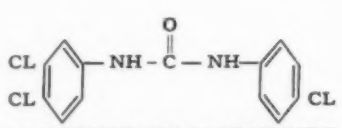
of the wide variation in the performance of a given bacteriostat in various synthetic detergent and soap formulations, may indicate that toilet soaps, formulated to take maximum advantage of a bacteriostat, may prove to be superior deodorant products.

The major bacteriostats for use in laundry detergents are hexachlorophene, tri-chlorocarbanilide, and tetrachlorosalicylanilide (See Figure I). A few years ago

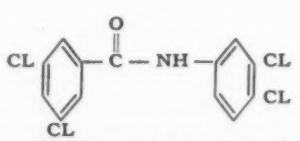
FIGURE I
BACTERIOSTATS USED IN LAUNDRY DETERGENTS.



HEXACHLOROPHENE



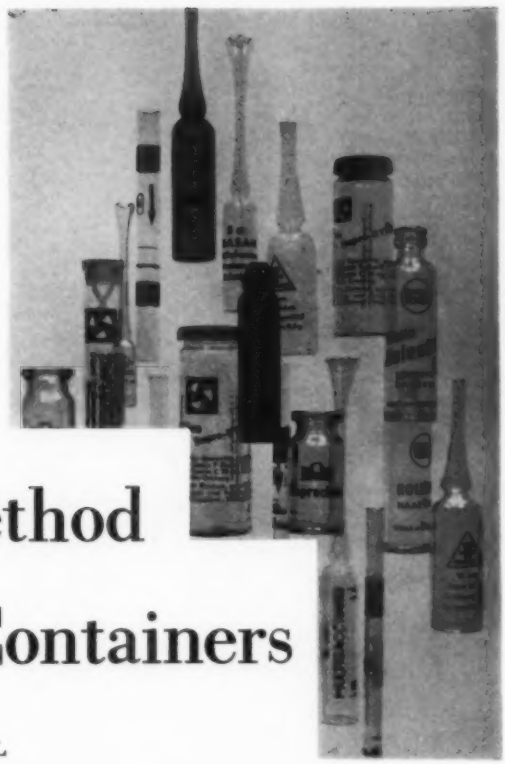
3,4,4' TRICHLOROCARBANILIDE



3,3',4',5-TETRACHLOROSAICYLANILIDE

Armour & Co., as disclosed in several foreign patents, discovered that mixtures of trichlorocarbanilide and certain bisphenols functioned synergistically. This synergism of antibacterial acitvity is extremely obvious when such combinations are used in laundry detergents. Table I summarizes some data from the conventional agar plate method showing that mixtures of hexachlorophene and trichlorocarbanilide are strikingly more effective than any single bacteriostat in use today.

In conclusion, we have bacteriostatic agents that can be used in laundry detergents to impart demonstrable anti-bacterial properties to laundered articles. Through properly designed experiments simulating use conditions, one can demonstrate that this bacteriostatic activity offers the consumer measurable, practical benefits, fresh, sweet-smelling wash that will remain so in use—better personal hygiene. ■



Screen Printing Method For Small Round Containers

FRITZ HUMMEL

SMALL PACKAGING VESSELS are normally only used once, and are consumed in large quantities by the chemical, pharmaceutical, cosmetics and food industries. It is therefore essential that ampules, medicine bottles, tubes for tablets, screw top bottles and glass or plastic containers for batteries and pins are produced as economically as possible. This applies also to printing them. It is economical only if it is carried out on fully automatic machines. With conventional printing methods the print was often illegible or at least hard to read, because owing to insufficient adhesion between ink and container only an extremely thin film of ink could be applied. Thus it could happen that some medicament was mistaken for another with possibly fatal results in hospitals and sanatoriums.

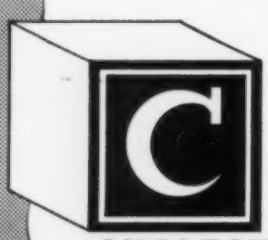
Only one of the latest methods of the graphic art—the screen printing process, enables a paste-like film of ink to be transferred to a cylindrical body. Since the ink is also burnt into the glass at a temperature of about 1100°F, it is extremely resistant against wear and alkalis and acids and is naturally always easily legible.

Printing of containers by means of the screen printing process has undeniable advantages, compared with labels: The ink is already firmly burnt into the glass before the vessels are filled, and will then resist even corrosive alkalis and acids, whereas a label may be washed off as the containers are being filled. Now a modern screen printing machine has been developed by Messrs. Brockmann, Westheim/Westfalen, W. Germany for fully automatic printing and burning-in or drying of colours. With the machine small glass or plastic packaging containers of 5/8"-1 3/8" diameter and 3/4"-5/16" length of body are fed automatically from the feed magazine to the screen printing machine, where they are printed with a heavy coating of ink. The vibrator of the feed magazine protects the machine against jamming of the feeding gear. For printing of ampules the machine can additionally be provided with an automatic ampules feeding device.

The ampules are filled loose and disorderly in a storage bin, from which the feeding device feeds the ampules in good order to the screen printing machine. After printing, the containers are individually fed on to a conveyor with boat-shaped sheetmetal cups. The surfaces of the cups are arranged at an angle to each other, and the printed object rests on them on only two or four points, according to its shape. This ensures that the fresh film of lacquer does not make contact with the support. During their further motion in the electric oven, the objects remain on the conveyor and are released only after the lacquer has been burnt in resp. dried. They then slide into a container or on a conveyor from which they are taken off and packed. Type SD 6 with burning-in oven is designed for printing of glass containers, type SD 8 with drying device for printing of plastic packages. The output regulator allows for continuously variable adjustment for 1000-5000 impressions per hour according to the size, type and shape of the objects. Two containers will then be printed in one operation. For large quantities this is very important, because with doubled output the machine will be paid off rapidly.

One unskilled female operator can operate the machine and at the same time observe work and machine.

The current consumption of the burning oven is very low. The conveyor cups pass through the most favourable heating zone, whereas the chain, to which they are fixed is running underneath the heating zone. The burning-in oven is provided with an automatic temperature regulating and setting installation. Both halves can be hinged apart, it is therefore easily accessible for cleaning. A novel micrometric fine adjustment enables the screen stroke to be set quickly and accurately from the operating position. ■



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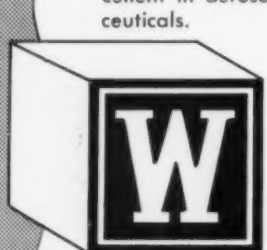

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SKIN OF OLDER WOMEN

(Continued from page 42)

statements from men other than physicians, as Walter Slezak's recent remark that American women can be found doing one of two things: "Making up their faces, or making up their husbands' minds." Furthermore, the American woman is being made to look like a moron by her gullibility in such matters, such as that by putting a bee's food on her epidermis she will become some sort of queen herself.

The American woman is developing a Peter Pan complex, which does not generate a mature outlook so desperately needed in the world today. As a dermatologist, I have spent many years in an appraisal of all these points. Among the women I have treated must be included society women, intellectual women, models, scrub women and just about every type and many nationalities. In all honesty, I find that I can just about guess the age of a patient regardless of how well groomed she is. To me, the expensiveness in money and time spent on self is a big differentiating point with regard not so much to age as it is to class. The loveliest women I have met are not measured in terms of economics but in terms of facial expression and bearing relating to their state of health and happiness. From time to time I have had the unhappy thought that it is impossible to get to know a specific woman because she wears a false face. To me, this is the unfortunate abuse of cosmetics. We end up with many professional people of all types, including dermatologists, just negating all cosmetics, and closing their minds to the true values of cosmetics in the broad sense.

The ultimate aim of the professional person either in medicine or in industry is to help set people free—free from bondages of all sorts. May I quote a British physician in an address at Oxford University: "The physician tries to set people free from disease and put them on the road to health. The truth makes people free. But intellectual or scientific truth and the truth of the spirit are both aspects of the truth which makes people free. Spiritual truths set us free from diseases of the spirit as pride, fearfulness, self-pity, self-indulgence, resentment. There are laws of the spirit just as absolute as the laws of science" (15).

I do not know what wonders are yet to come out of the chemistry laboratories. But I do know that the cosmetic chemists have a job to do in keeping the entire exterior of the body in good condition commensurate with the increasing longevity of the human race. In conclusion, I would like, as a dermatologist and as a woman, to challenge the cosmetic chemists to continue rapidly enlarging their scope away from overstimulation of self-interest in women, to a general public service.

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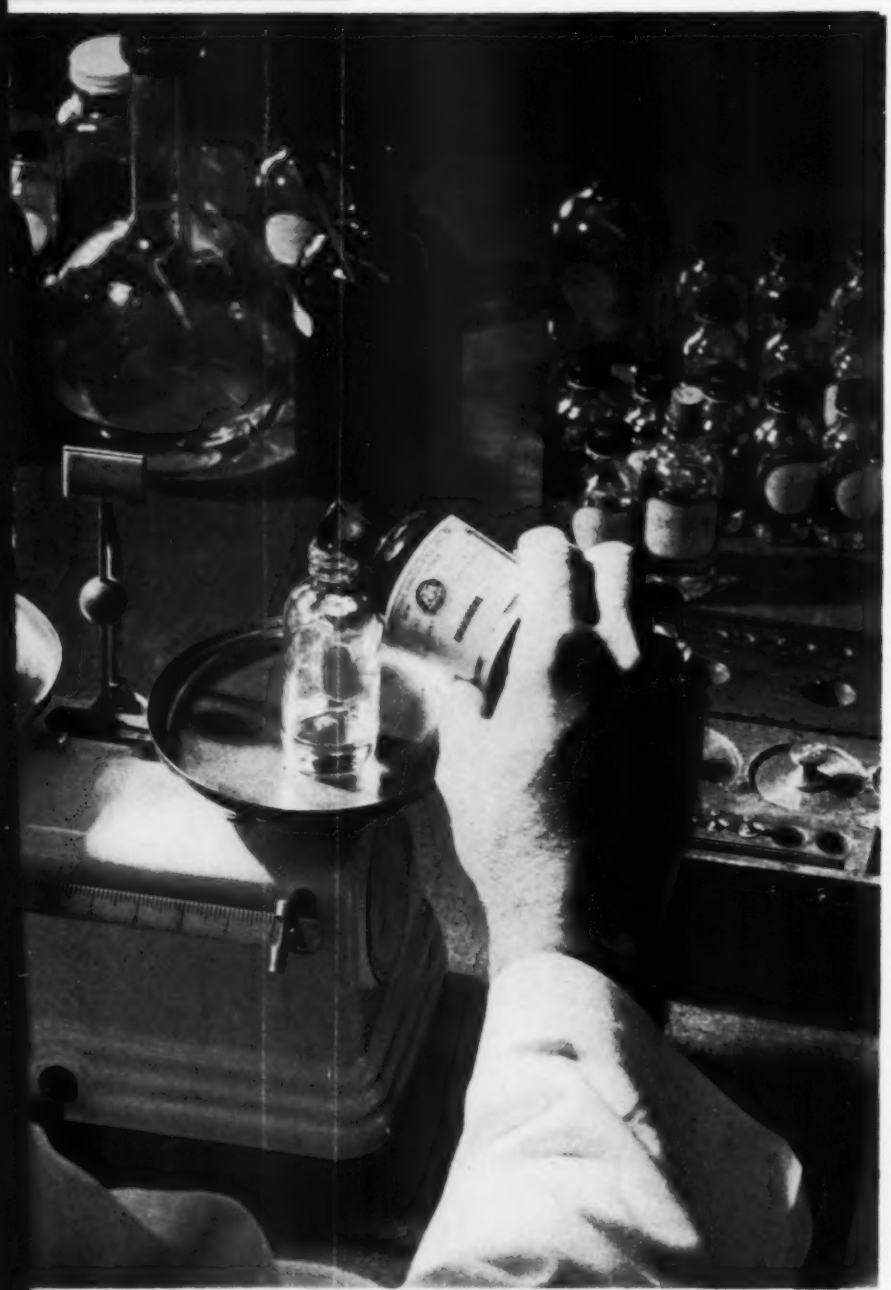

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Patterson-Kelley Awarded Patent For Its Blender

Recognizing a total of nine claims made in application, the United States Patent Office has awarded the Patterson-Kelley Co., Inc., a patent for its Liquid-Solids® blender.

The patent—Number 2890027—relates the blender specifically "to improvements in machines designed to wet or moisten dry powdered materials such as are normally considered to be immiscible because of their tendencies to ball up and 'lump' when coming in contact with small streams or droplets of liquids."

Frank L. Patterson, Jr., company president, said the patent award granting all claims made in the original application "indicates the thoroughness with which the blender was engineered and points up the truly significant blending principles incorporated in the product design."

Basically, the patented blender consists of two cylinders cut at right angles and joined to form a V-shaped design. This fundamental Twin-Shell mixing principle produces a combined tumbling or rolling action with a simultaneous transverse movement within the entire mass of material, plus a folding action created by the dividing of the mass during rotation. The blender is charged easily from either of two openings at the ends of the "V" and discharged freely through an opening at the apex of the blender.

To introduce liquids to solids, a hollow cylindrical bar mounted cross the blender axis and equipped with precision machined distributing discs, revolves inside the shell to provide controlled liquid dispersion, ranging from a coarse spray for granulations to an extremely fine "fog" or mist for lump-free formulations. Liquids may be gravity-fed or pumped.

The liquid feed bar also is equipped with specially-designed agitator blades which, when the bar is rotated at the required speed to centrifugally disperse the liquid, "cavitates" the body of dry materials and maintains it in a locally churned and fluffed-up condition. Approximately 25 different versions of the feed bar assembly have been designed to meet variable blending of formulations in the process industries.

Presently, Liquid-Solids® blenders manufactured by the company range in size from one-quart to huge units of 800 cubic feet or more, and are constructed of clear plastic (laboratory models usually used for research), stainless steel, or coated and uncoated carbon steel for large units.

Some of the objectives of the blender, as stated in the patent, are "to provide an improved form of blending mill adapted to uniformly blend relatively small amounts of liquids into dry material . . . normally non-receptive to moistening or wetting treatments . . . without the use of complicated or expensive accessory equipment."

The patent was granted to John J. Fischer, assignor to Patterson-Kelley and Chief Engineer of the company's Process Equipment Division.

One of industry's oldest and largest heat exchanger manufacturers, the company manufactures a complete line of blending equipment, including completely self-contained vacuum tumble dryers for blending and drying heat sensitive materials, double-cone, and ribbon-type blenders, and a varied line of process equipment ranging from standard pressure vessels to packaged distillation pilot plants for production testing previous to on-line production.

To research blending problems—either on a prospective basis or on customer request—the company operates a pre-testing laboratory at its main plant in East Stroudsburg, Pa., where engineers and chemists develop proper blending formulas and procedures for many different products—beverages, cake icings, drugs, ceramics, detergents, plastics, metallics, cosmetics, paints, and insecticides. Since some of this testing is conducted on a prospective basis, many products have been "given birth" in the P-K laboratory, and others have existed only for a short time before being committed to further research.

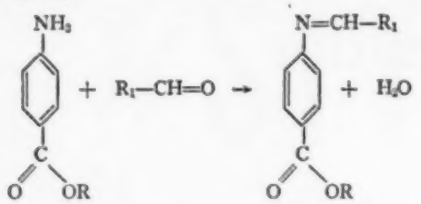
Pharmaceutical manufacturing technician inserts liquid feed bar assembly in the Liquid-Solids® blender before beginning blending preparations for a pharmaceutical formulation. Designed as an integral part of the blender, the liquid feed assembly shown here consists of a hollow cylindrical bar through which liquid flows from a feeder tube onto slanted distributing discs like the one seen toward the end of the bar. By centrifugal force, the discs continuously feed a finely divided "mist" into the solids held in fine suspension by the wire cage assembly surrounding the feed bar.

COSMETIC SUN SCREENS

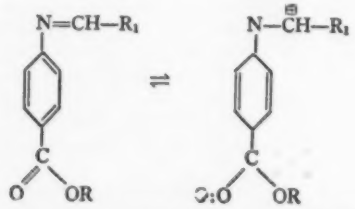
(Continued from page 32)

and the resulting *p*-acetamidobenzoate ester is not a good cosmetic screen.

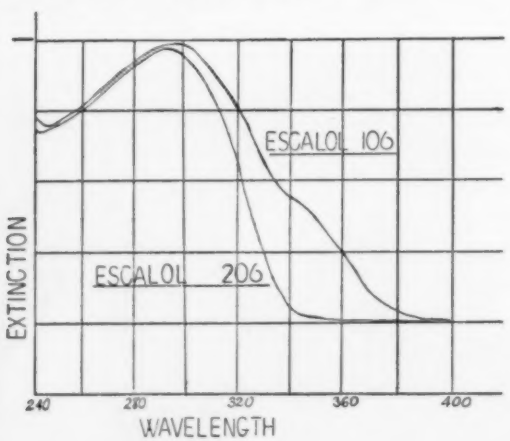
Another method of modifying the amino group is through Schiff-base formation by condensation with an aldehyde group.



The resulting aldimino structure allows a transition to occur which lies within the erythematogenic range of energy,



and the resulting activated state is resistant to oxidation. These Schiff bases are the newest development in commercially available cosmetic sun screens. Thus, ethyl-*p*-glucosylimidobenzoate is a screen (Escalol-206*) which is highly selective in its activity. To a greater extent than even the *p*-aminobenzoate esters, such compounds absorb selectively in the erythematogenic range while they are nearly completely transparent in the higher ultraviolet. They permit the most complete transmission of the tanning radiation while providing efficient protection against erythemal radiation.



Thus a 2.7 per cent concentration of Escalol 206 in a clear or emulsified lotion transmits only 7.4 per cent of the erythematogenic radiation of sunlight, and 95.6 per cent of the radiation in the so-called tanning range, above 315 millimicrons.

Reference

(1) Rodd, E. H., "Chemistry of Carbon Compounds," Vol. 1A, Elsevier Publishing Co., Princeton, N. J. (1951), pp. 71-93.

* Van Dyk & Co., Inc.

ORANGE OIL

(Continued from page 34)

On the basis of CD and peak absorption values, it would be impossible to distinguish between FMC and screw press oil. However, in consideration of the values for evaporative residue presented in Table 1 it is an easy matter to distinguish between these two types of oil. The evaporative residue for screw press oil in general never exceeds 2.0 percent; whereas, the evaporative residue for FMC extractor oil is always higher than 2.0 percent. There may be some instances in which residues for the screw press would be higher than 2.0 percent and conversely the residue for FMC oil would be lower than 2.0 percent. However, on the basis of our findings, from a three-year study, this would be the exception rather than the rule.

It is an easy matter to distinguish Pipkin roll oil from screw press and FMC extractor oil solely on the basis of CD values. The Pipkin roll oil has an average CD value of 0.47, which is almost twice that of 0.28 for the screw press and FMC oil.

California orange oil has an average CD value of 0.14 to 0.16 on the basis of data presented. The CD value of 0.14 to 0.16 is approximately one-half of 0.28 for the FMC and screw press oil, and approximately one-third of 0.47 for the Pipkin roll oil. Thus California oil can be distinguished from all three types of Florida oil on the basis of CD value alone.

Summary

A physicochemical method has been developed whereby coldpressed Florida orange oil can be distinguished from coldpressed California orange oil. This method has the further advantage of being able to show by what manufacturing procedure Florida oils have been produced.

Table 2. Summary of 27 spectrophotometric analyses of California coldpressed orange oils by commercial companies.

U. V. Spectrum Mu log E $\frac{0.25\ g}{100\ ml}$			
	CD	Peak	Mu
Maximum	0.20	0.43	329
Minimum	0.11	0.27	328
Average	0.16	0.36	329

References

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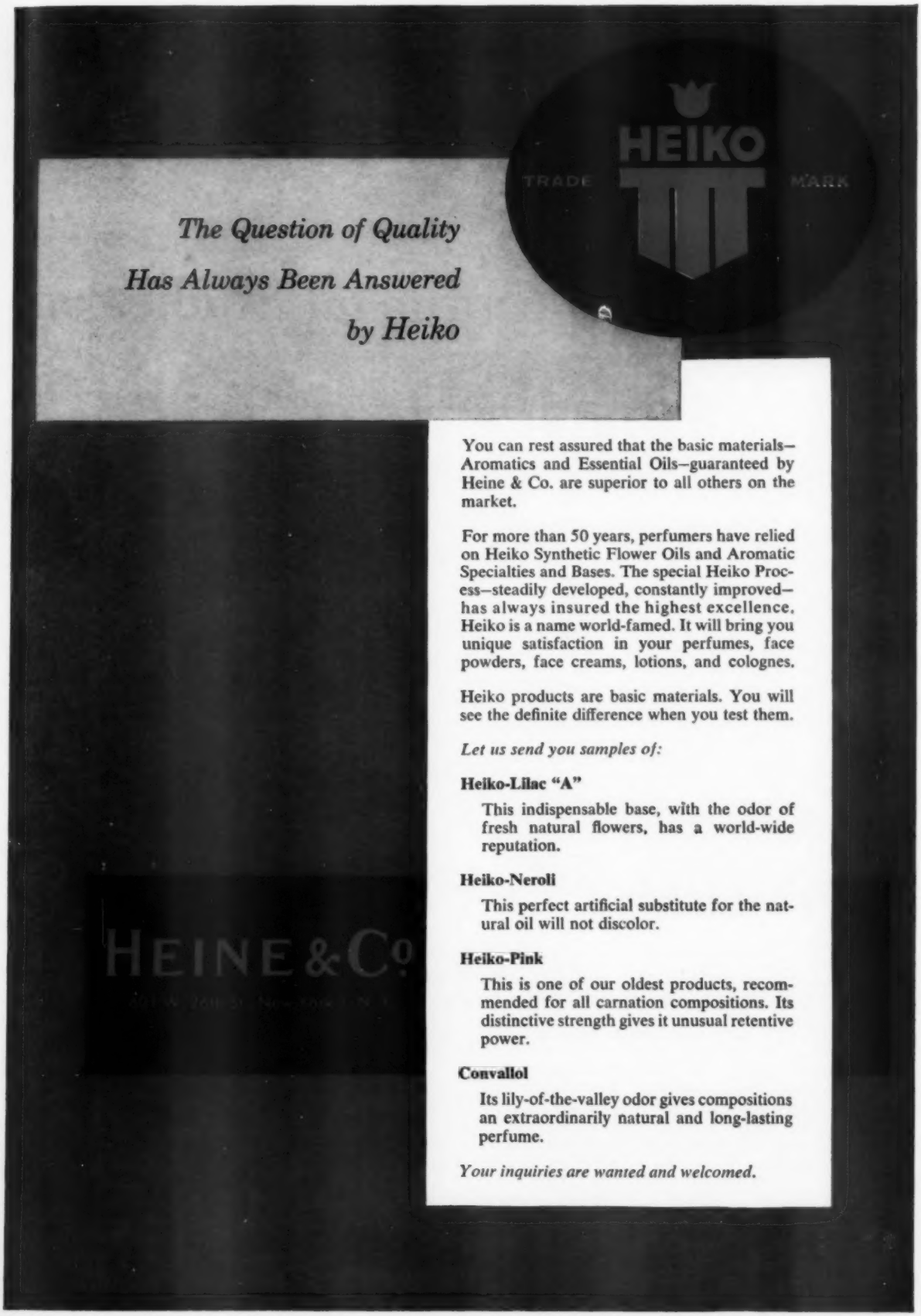
2. Kesterson, J. W. and R. Hendrickson. Two commercial methods for the production of citrus oils in Florida. Amer. Perf. and Aromatics 67:2: 35-38. 1956.
3. Kesterson, J. W. and R. Hendrickson. Essential oils from Florida citrus. Univ. of Fla. Agr. Exp. Sta. Tech. Bul. 521: 1-70. 1953.
4. Sale, J. W., et al. Analysis of lemon oil. Jour. Assoc. Offic. Agr. Chemists 36:1: 112-119. 1953.

CORRECTION

Figure 1 of the article "Urocanic Acid, A Physiological Sunscreen" shows L-Urocanic Acid, which should be corrected to read, Urocanic Acid. September, page 27.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TECHNICAL DIGEST

Synthesis and Antifungal Studies on Sorbic Acid Derivatives

DALE H. CRONK, LOUIS C. ZOPF, AND JAMES W. JONES

Nine esters, one amide, and two amine salts of sorbic acid were prepared and tested against four pathogenic fungi by two methods. Of the twelve compounds, *o*-hydroxyphenyl sorbate, chlorothymol sorbate, isobutylamine sorbate, and morpholine sorbate exhibited the greatest activity.

Antimycotic activity was determined against Microsporum canis, M. gypseum, M. audouini, and Trichophyton rubrum by using spore suspensions in a specially prepared solid medium. Two plates per organism were used.

The nine esters prepared were the following:

p-Chlorophenol
2,4,-Dichlorophenol
2,4,5-Trichlorophenol
p-tert Butylphenol
Methyl paraben
Hexylresorcinol
o-Hydroxyphenol
Chlorothymol
o-Chloro-*m*-cresol
Aniline
N-Isobutylamine
Morpholine

In one series the spore suspension was mixed with the medium. In the other, the spores streaked over the agar. The antiseptic was incorporated into hydrophilic ointment and streaked over the solid medium.

Digested from *J. Am. Pharm. Assoc., Sci. Ed.*, 48, 455 (1959).

Perspiration Resistant Make-Up Base

Requirements for a make-up for use in television work are quite different than those for similar products in social usage. Haberle and Sperandio (J. AM. PHARM. ASSOC., PRACT. PHARM. ED., *20*, 403 [1959]) discuss the subject from the point of view of formulation requirements. The following formula gave the best foundation:

Stearic acid	25.00 Gm.
Glyceryl monostearate	2.00 Gm.
Isopropyl palmitate	2.00 Gm.
Velvasil 1000[a]	4.00 Gm.
Glycerin	3.00 Gm.
MYJR 52[b]	0.50 Gm.
Atlas G-2162[c]	0.50 Gm.
Methyl Parasept	0.20 Gm.
Distilled water	62.80 Gm.

After many tests a formula was devised that gave a perspiration resistant make-up base from the following ingredients:

Tegacid	13.00 Gm.
Isopropyl palmitate	2.00 Gm.
Velvasil 1000	4.00 Gm.
Glycerin	3.00 Gm.
MYJR 52	0.50 Gm.
Atlas G-2162	0.50 Gm.
Methyl Parasept	0.20 Gm.
Aluminum methionate	15.00 Gm.
Distilled water	61.80 Gm.

The final usefulness was determined by ten women who used the product for seven days.

(However, it must be noted that aluminum methionate is patented as an antiperspirant material by U. S. Patent No. 2,504,107 granted to Christian and Jenkins in 1950. Ed.)

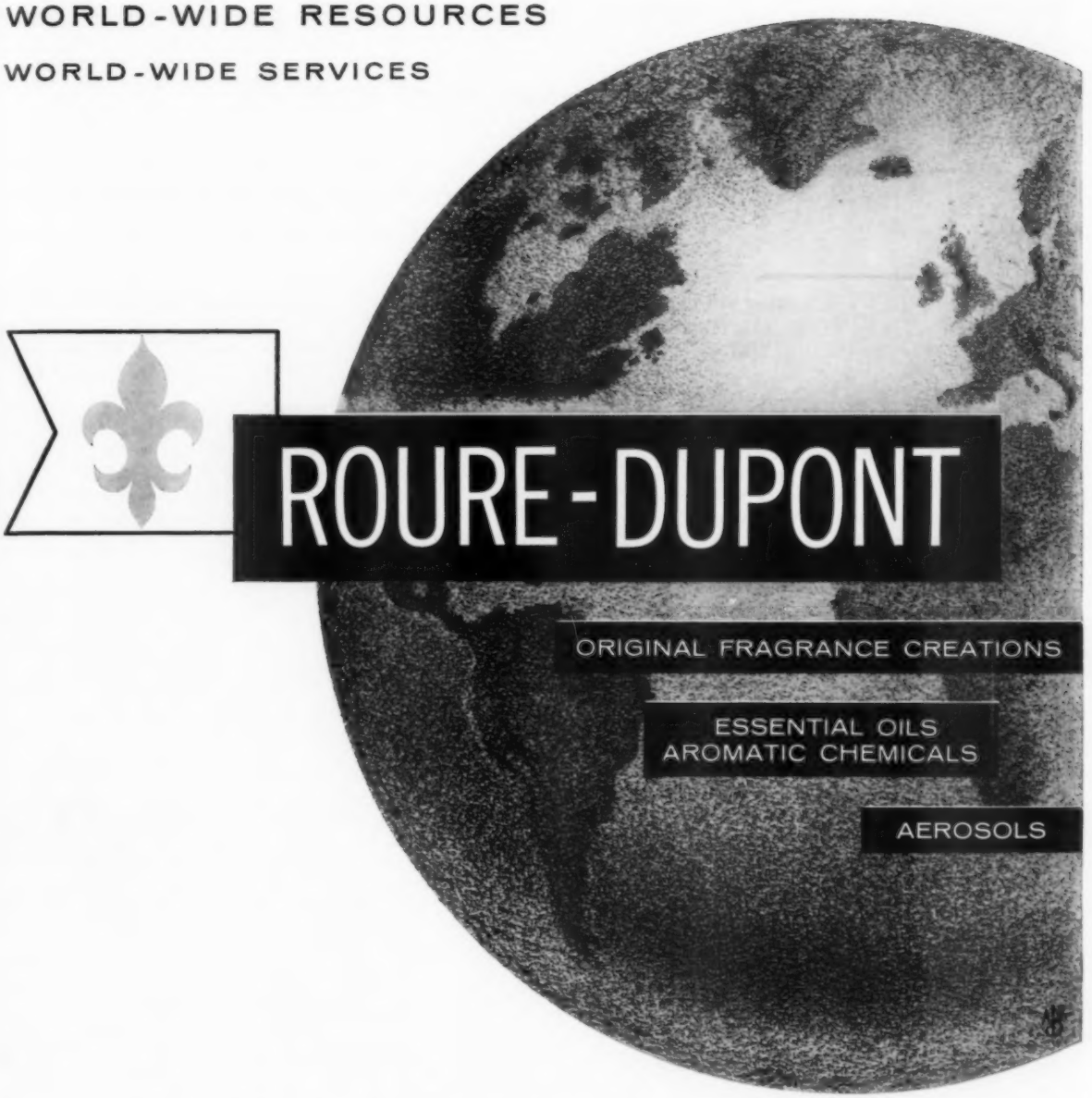
[a] A product of the Silicone Products Division of the General Electric Company, Waterford, New York.

[b] Polyoxyethylene stearate, Atlas Powder Company, Wilmington 99, Delaware.

[c] Polyoxyethylene oxypropylene stearate, Atlas Powder Company.

WORLD-WIDE RESOURCES

WORLD-WIDE SERVICES



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Technical Abstracts

POLYOLEFINS AS PACKAGING MATERIALS FOR TOILETRIES WITH SPECIAL REFERENCE TO POLYPROPYLENE

A progress report is made on 18 materials such as polyols, fat, oils and surfactants commonly used in toiletries with regard to weight and volume losses at bathroom temperature and 120°F when packaged in high density polyethylene and polypropylene 4 ounce Boston Round Bottles. After 3 and 4 week test periods the samples are examined to determine losses, distortion and exudation. Two types of high density polyethylene were studied. One with a nominal melt index of 3.5 and the other with an index of 0.2. A commercial ISOTACTIC polypropylene was also tested. *Abstract of T.G.A. paper by William O. Bracken.*

THE MEASUREMENT OF COLOR IMPRESSION

The quantitative evaluation of color in accordance with the human color-sense is quite different from the familiar chemical colorimetry. The former is the analysis *of* color, the latter analysis *by* color.

A short review is given of the tristimulus system of color specification. This system permits the exact and objective description of color by just three figures. In this manner, color specification free of ambiguity is possible, and records of colors can be kept without the need of actual samples. The necessary instrumentation for color measurement according to this system is briefly discussed.

The limitations of the tristimulus system of color measurement are also presented. These are partly physical, partly biological, i.e., due to individual variations in color perception. Moreover, vision is basically a psychological process, and psychology is an important factor in color perception. Some of the curious psychophysical effects are illustrated by slides.

Despite its limitations, objective color specification is a powerful aid in both research and production. Its place in the cosmetic industry is briefly indicated. *Abstract of T.G.A. paper by Gabor B. Levy, Ph.D.*

ALKYL SULFATES: THEIR STABILITY TO HYDROLYSIS

The stability of Sodium Lauryl Sulfate in solution has been a question raised alike by producers and users. The general statement in circulation is that it will hydrolyze but nothing is stated about the conditions of storage such as temperature and actual pH of the solution. Analytically Sodium Lauryl Sulfate is determined by refluxing after the addition of acid. General use conditions do not usually make use of these conditions.

The conditions favoring hydrolysis of this ester are in part the opposite of that producing rupture of fats. Alkaline conditions, even down to pH of 3, do not lead to damage at low temperatures. Higher temperatures and higher acidity can result in breakdown up to 100% in a few hours, or a shelf life shortened to only a few months. Data is presented covering storage of solution under various conditions. *Abstract of T.G.A. paper by R. R. Read and W. G. Fredell.*

SYNTHESIS AND BIOTESTING OF METALLIC SURFACTANTS

Jack N. Bone & David W. O'Day, Univ. of Wyoming, Col. of Pharmacy, Laramie. "The silver, mercury, lead, zinc, copper and iron salts of lauryl sulfate, dioctyl sulfosuccinate and isopropyl-naphthalene sulfonate have been made. The activity of these has been determined against Micrococcus pyogenes var. aureus, Pseudomonas aeruginosa, and Trichophyton mentagrophytes. The activity of the copper, iron, zinc, and lead salts of the surfactants against the bacteria was increased over the activity of their corresponding chlorides, nitrates, or sulfates. There was a decrease in activity in the mercury and silver surfactants against the bacteria. The antifungal activity of all six metals was increased in the form of the surfactant salts as compared with their corresponding chloride, nitrate, or sulfate salts. Of the three surfactants used, the alkyl sulfate appeared to increase the activity of iron, mercury and silver more than the other two against Micrococcus aureus. The alkyl sulfate salts of mercury and silver were more active against Trichophyton mentagrophytes than the same salts of the other two surfactants." Thru J. Am. Pharm. Assoc., Sci. Ed., *47*, 795 (1958).

TREATMENT OF DANDRUFF

"As a result of a study of three different methods of treating dandruff, carried out on 102 patients, in which he compared salicylic acid lotion, selenium sulphide and a proprietary preparation containing benzalkonium chloride, A. P. Caspers (Canadian Medical Association Journal, July 15, 1958, *79*, 113) concludes that the third of these is "not only the most effective but also the most aesthetically acceptable, of the three preparations evaluated." Of the thirty men in the group treated with the benzalkonium preparation, 50% responded rapidly, 46.6% moderately and 3.3% slowly. Of the four women, two responded rapidly and two moderately. The one slight disadvantage of this preparation is its liability to cause a low-grade conjunctivitis if it gets into the eyes. In using the benzalkonium preparation, the hair is first wetted thoroughly and then the solution is well massaged into the scalp for two or three minutes. The hair is then rinsed, another lot of the preparation applied, and then the hair finally rinsed. As dandruff is liable to become worse after a visit to the hairdresser, it is recommended that the hair should be shampooed with the benzalkonium preparation as soon as possible after the visit—preferably within twelve to twenty-four hours." THE PRACTITIONER, *81*, 664 (1958).

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SOFSKIN—1

The makers of Sofskin Moisture Magic Hand Cream announce new labeling that emphasizes the effectiveness of the product in the relief of dry skin, an especially common complaint in cold weather. The label now refers to the product as Sofskin Dry Skin Hand Cream with Moisture Magic. The newly-labeled jars are now being shipped in colorful black, white and blue counter display units that hold six jars.

NOONAN—2

Modern Glass packages have been adopted by T. Noonan Sons Company, Boston, Mass., for the merchandising of its Lemon Shampoo. New bottles, holding 6 and 3 ounces, are styled with a handy-grip and have vertical ribbing at the base. Noonan is using a deep-skirted plastic closure in red color offering an effective contrast to the product. New label gives breadth to the package. Product is distributed through wholesale druggists and chain stores in both food and drug fields on a national basis. It is best known in the East and New England states. Owens-Illinois Glass Company supplies bottles and closures; Stecher-Traung Lithograph Corp., Rochester, N. Y., the labels.

BARBARA GOULD—3

Barbara Gould, Inc., has announced the return of its three popular cold weather promotions: "Vitamin Enriched Night Cream" available for a limited time only at the following prices: 3¾ oz. at $1.25 and 8 oz. at $1.75; "Winter Wonder Lotion" at $1.00 a bottle; and "Hand Cream" at $1.00 for the regular size. All three of these promotional values were available for shipment on September 15th.

SCANDIA—4

Scandia announces two new shades in their Secret Touch Lipstick line. Available now "Red Radiance," and "Mid-

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night Sun." The former is a crystal clear red, the latter is a coppery golden red. Both are priced at $3.50. Refills $2.00.

MAX FACTOR—5

Max Factor Active Moisturizer in Special ½ Price Offer—To culminate a record breaking 50th anniversary sales year, Max Factor is offering his highly effective Active Moisturizer, from his Secret Key treatment line, as a special ½ price presentation to go on sale December 26 right after Christmas during the traditional post-holiday treatment-special selling period. Sold regularly at $2.50, it is being specially priced, for a limited time only, at $1.25, plus tax.

PRINCE MATCHABELLI—6

The first metered aerosol cologne in the Prince Matchabelli line has just been introduced. Available in Prince Matchabelli's two musically named scents, Stradivari and Wind Song, the new cologne spray mist comes in a styled black and white tubular metal container, banded with a circle of gold. The top of the cap, also gold, carries the Prince Matchabelli name and crest. The name of the scent and the traditional Prince Matchabelli crown are silk-screened in black on the white base of the case.

TANGEE—7

An attractive product in an eye-catching package add up to high sales figures, according to John N. Carroll, vice-president of the Geo. W. Luft Co., which has just introduced six new Tangee lipstick shades presented on a counter-display carton. These six new shades, called Iridescent Pastels, are priced to retail at 69¢ each. The counter display carton contains one dozen lipsticks.

HAZEL BISHOP—8

New jeweled filigree evening case—complete with lipstick . . . copy of a $500.00 original, now offered to the public at $3.00 plus tax.

7.

8.

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We shall be happy to analyze the specific role of musk in your products and to make recommendations from our extensive, quality-controlled line to help you achieve the right musk character.

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ALOE VERA GEL

Continued from page 28

the substance used in the manufacturing of finished products. After the cells have been punctured, this liquid is carefully strained through a series of stainless steel strainers, filtering out any foreign matter or cell residue. Iron or other metals cannot be used in the processing of the gel due to its pH which is on the acid side.

A cream containing this gel has recently completed the second of two phases of clinical studies on burns. The results of these studies are so important from a medical viewpoint that Stockton, and his medical staff presented conclusions drawn from this research to the Scientific Branch of the United States Government on January 19, 1959. A medical journal article on this research is scheduled to appear in the August issue of the Journal of Industrial Medicine and Surgery. This research was also submitted to the Food and Drug Administration, and upon review, the FDA admits that the ointment does actually regenerate skin tissue. The research showed: (1) Microscopically, what happens to a burn when treated under the open-exposure method. In this research Aloe vera gel cream showed at what precise period the eschar begins to form. (2) Microscopically, how the development of eschar can be prevented in the early stages of a burn when Aloe vera ointment is applied. (3) It established a yardstick of procedure whereby any laboratory can tell within four days whether a medication actually heals. (4) That severe, deep thermal burns heal in half the time—with no scar tissue —where Aloe vera ointment is used.

This same "regenerating" formula is being carried into a line of cosmetics and suntan preparations.

Aloe Creme Laboratories, Inc., is confident that the Aloe vera gel is such an important ingredient from a medical and cosmetic viewpoint that within the next several years every top-grade cosmetic house will include Aloe vera in their formulations. The company is now planning production on such a basis that Aloe vera products will be available in the near future to other manufacturers. It is also patenting various processes used in relation to the Aloe vera gel substance.

REFERENCES

[1] Aloe Creme Laboratories, Inc., Fort Lauderdale, Florida

[2] Rodney M. Stockton, President and founder of of Aloe Creme Laboratories, Inc.

TRADE LITERATURE

Acetophenone data

● New data on the reactions and pharmaceutical applications of acetophenone are outlined in a 12-page bulletin issued by Union Carbide Chemicals Co.

Acetophenone is widely used for its solvent and odorant properties and, because of the reactivity of its aryl, carbonyl and methyl groups, as an intermediate in the synthesis of a broad range of compounds.

In the pharmaceutial industry, acetophenone is used as a soporific and hypnotic. Its derivatives are used in a variety of pharmaceutical compounds, among them the penicillin salt which has a prolonged antibiotic effect. Acetophenone can also be reduced to phenyl methyl carbinal, a base and fixative for perfumes.

Sindar supplement

● Sindar Corp. has just published a supplement to its Technical Bulletin H-1, "G-11® (Hexachlorophene U.S.P.)—An Annotated Bibliography." The supplemental Bibliography appears in the Sindar Reporter Number 3, 1959 and includes abstracts of 23 articles and 4 patents. An index to the Supplemental Abstracts similar to the one used in the original technical bulletin has also been published in order to give the readers access to any particular subject of interest.

Ethylene oxide manual

● Publication of a 48-page technical manual on ethylene oxide is announced by Antara Chemicals. This manual brings up to date the available information on physical and chemical properties, specifications, analytical procedures, and industrial uses. Extensive data is included on ethylene oxide handling techniques and toxicity, with a detailed and thorough 20-page section on storage, explosion-and-fire prevention and control, protection of personnel and first-aid instructions, protective equipment, and tank-car unloading procedures.

Polyester resin

● Two new bulletins describe the properties, applications, and a room-temperature curing system for Atlac 382, a unique polyester resin developed by Atlas Powder Co., Chemicals Division. The bulletins will be of interest to those industries that are faced with problems of physical, chemical, or electrical failure in equipment as a result of elevated temperatures or corrosion. The 12-page "properties and use" bulletin also contains detailed instructions on using the resin and includes information on curing at elevated temperature. Also included are tables on chemical resistance, gel and reactivity times at various bath temperatures, properties of glass mat and glass cloth laminates, and viscosity graphs.

An 11-page technical bulletin provides practical information on using the room-temperature curing system for Atlac 382.

The bulletin contains a list of some typical concentrations that will provide specific gel times and a number of full-page graphs dealing with viscosities and gel times of Atlac 382 solutions.

Lab ware catalog

● The new 24 page catalog No. H-459 is now available, covering Polyethylene, Polypropylene, Polyurethane and Polyvinyl Plastic laboratory apparatus. The General Scientific Equipment Co. illustrates and describes over 100 products.

Chemical export list

● A newly published chemical "Export Products List" of Hooker Chemical Corp. is now available.

This bulletin No. 11 contains brief descriptions, physical data, uses and packaging information with respect to the thirty-one chemicals listed which Hooker offers for export.

Chemical industry facts

● A Fourth Edition of the Chemical Industry Facts Book will be published in Oct. by the Manufacturing Chemists' Association.

Designed as an aid to economists, journalists, students, teachers and others requiring specific information on the chemical industry and its products, the illustrated book will contain material on virtually every aspect of the field. Single copy price of the book will be $1.25.

The Laboratory

● The latest edition of The Laboratory, published by Fisher Scientific Co., features the new developments in the world of "germ-free" research . . . an attachment that turns a two-pan balance into a recording instrument . . . a roll around vacuum system . . . and a "packaged" waste-water lab that provides everything for sewage analysis, as a few of the highlights in Vol. 27, No. 5. Readers must specify whether the regular or clinical edition is desired.

Check List of Best Selling Technical Books

☐1. **COSMETICS, SCIENCE AND TECHNOLOGY.** The editorial board of this encyclopedia cosmetic work is made up of H. D. Goulden, E. G. Klarmann, and Edward Sagarin, executive editor. It is in five parts: I, Scope of Cosmetics (80 pages); II, Toilet Preparations (812 pages containing 800 formulas); III, Manufacture and Technology (214 pages); IV, Physiological Considerations (92 pages); plus preface and complete index. The sixty-five experts who contributed, are a "who's who" of cosmetic chemists in the United States and Canada. 1433 pages. Illustrated. Price $25.00.

☐2. **PERFUMES AND THEIR PRODUCTION.** By E. S. Maurer. This is the first text of its kind in the English language to give a complete picture of the perfumer's training, and methods of working. In Part I the reader is offered a complete picture, not only of formulations, but of the entire scope and organization of the perfume industry. Part II is a systematized discussion of all the commonly used perfumery isolates and synthetics. Practical hints on utilization of most of these materials are included, together with notes on their specific applications, blending properties, and other functions. 313 pages. Price $6.50.

☐3. **PRESSURIZED PACKAGING (AEROSOLS).** By Alfred Herzka Jack Pickthall. Although technical problems occur with all types of packages, those which arise with pressurized packages are many and complex. This reference book, by two recognized authorities deals with propellants, containers, valves, filling methods, laboratory procedures, emulsified systems, and perfumes. There is a complete section containing more than 200 formulations, including foods, insecticides, cosmetics, paints, and numerous other products. 400 pages. Illustrated. Price $12.00.

☐4. **PERFUMERY SYNTHETICS AND ISOLATES.** By Paul A. Bedoukian. This carefully compiled volume meets the genuine need for authoritative data on perfumery synthetics. It embraces the history, chemistry, physical and chemical properties, manufacture, uses, and other pertinent data of the principal perfumery compounds; and covers the important perfumery synthetics. A complete index adds to the value of this important work. 488 pages. Price $9.25.

☐5. **SOAPS AND DETERGENTS.** By E. G. Thomssen and J. W. McCutcheon. A working manual for the practical soap maker. Tabulates 250 surface active agents, their classification, trade names, manufacturers, and applications in the soap industry. Synthetic detergents are thoroughly discussed. Covers continuous soap making processes, soap perfuming and coloring, processes and methods. Up to date, authoritative. 511 pages. Illustrated. Price $9.25.

☐6. **COSMETICS—THEIR PRINCIPLES AND PRACTICES.** By Ralph G. Harry, discussed the skin, its nutrition and scientific care: the hair, its proper grooming, the physio-chemical problems involved in its washing; the teeth and their care, covering the present status of different dentrifices, and the luster-producing properties of ingredients. Much of the information has its source in the research activities of its author, embracing chemistry, dermatology, and microbiology. 786 pages. Illustrated. Price $17.25.

☐7. **INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES.** By Maison G. deNavarre, brings you reference data you will turn to constantly . . . the most complete listing of all the materials of the world used in cosmetic manufacture . . . including quick concise descriptions of approximately 4,000 materials . . . the names and addresses of the suppliers . . . and a very useful cross-index of the materials and their uses. You will use it when seeking new materials, or substitutes for those you may now be using. 400 pages. Price $7.50.

☐8. **HANDBOOK OF COSMETIC MATERIALS.** (Their Properties, Uses, and Toxic and Dermatologic Actions). By Leon Greenburg and David Lester. Contains alphabetical listing, with frequent cross references, of information on approximately 1,000 substances. For each compound gives: formula (including collateral names), properties, toxic action, dermatological action. Exhaustive bibliography. Essential for manufacturing chemists, cosmetic industry, dermatologists, allergists. 467 pages. Price $12.75.

☐9. **THE ESSENTIAL OILS.** By Ernest Guenther, with the collaboration of leading experts, this monumental six-volume work includes: Vol. I, Origin and Development of Essential Oils. 427 pages. Price $9.50. Vol. II, detailed data on several hundred constituents of essential oils. 852 pages. Price $13.50. Vol. III, discusses the oils of the plant families Rutaceae and Labiate. 777 pages. Price $13.50. Vol. IV, covers the widely used oils: citronella, lemongrass, bois de rose, cassia, and others. 752 pages. Price $13.50. Vol. V, takes up other oils of special interest to flavor, perfume and soap manufacturers: rose, ginger, cardamon, anise. 507 pages. Price $13.50. Vol. VI, completes the monographs on individual oils: wintergreen, sweet birch, juniper berries, and the numerous pine oils. 552 pages. Price $13.50.

☐10. **MANUAL FOR THE ESSENCE INDUSTRY.** By Erich Walter. Comprises modern methods, with formulas for making all kinds of essences for liquors and alcoholic drinks, fruit juices and jams, mineral waters, essences for fruits and other vegetables, essences for confectionery and pastry. Describes raw materials and laboratory practice. Discusses taste and the transfer to foods and beverages. 427 pages. Illustrated. Price $8.25.

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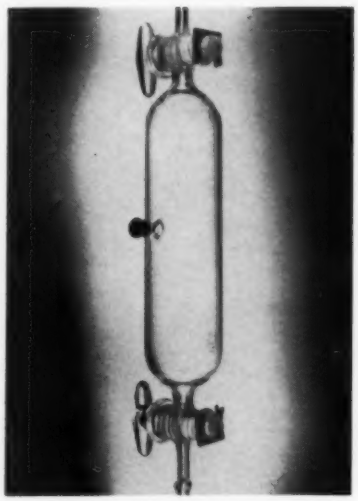
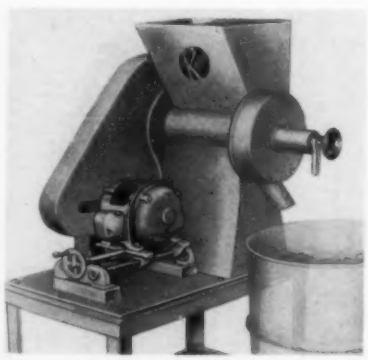
New PRODUCTS & IDEAS



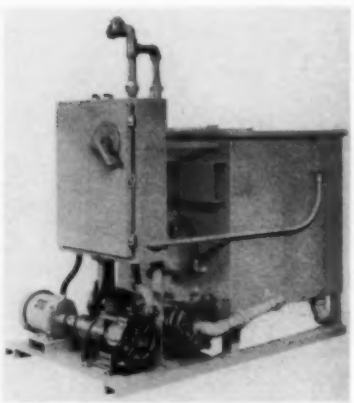
GAS SAMPLING TUBE

Fisher Scientific Co. has developed a new side-draw Chromatographic Gas Sampling Tube. It holds 250 ml. and has stopcocks at both ends for filling with a gas sample in the usual way. A short side-arm, with a self-sealing rubber cap makes the sampling procedure quite simple. The operator merely thrusts the needle of the syringe through the cap and draws out as much gas as he wants.



DRY CRUSHER

A heavy duty dry crusher or pulverizer has been added to the dry grinding equipment manufactured by Charles Ross & Son. This machine, the #70-H size 4 Crusher, incorporates a revolving crushing roll inside the hopper to give material a preliminary breaking down before feeding between special hardened steel grinding plates. Clearance of plates and fineness of grind are simply adjusted by handwheel, and when desired fineness is obtained, setting can be locked and material kept feeding through. The crushers feature variable speed drive as standard equipment to deliver best results with maximum production. An indicating gauge insures precise control of fineness of grind.



ELECTRONIC SOLUTION CONTROLLER

A new automatic Electronic Solution Controller system has been developed by the Electro Mechanisms Corp. for controlling concentration of caustic, acidic or aqueous solutions.

The controller can be used with either continuous or batch-type metal washing equipment, plating processes, chemical process systems, textile bath equipment, or any application where precise concentrate levels must be maintained.

In operation, whenever the level of the concentrated solution in the holding tank falls below a present point, the pump is automatically actuated and sprays a wash solution on the dry compound (or liquid concentrate) until the Wash Tank concentrate is again at the desired concentration level. The system is completely automatic since the wash tank solution is continuously circulated through the Sensing Electrode, and any variation in electrode output actuates the self-balancing control.

VISCOUS MEDIA VALVE

The Eco Engineering Co. has introduced the Eco Gear-Vac valve that is designed for valving small flows of viscous media (up to 250,000 SSU).

According to the manufacturer, no heating or pressurizing is required to induce flow through the valve. The valves will produce almost absolute vacuum, causing atmospheric pressure to collapse the viscous mass into the vacuum packet, providing a constant supply in the gear chamber for positive dispensing with metering accuracy within 2%.

Gear-Vac valves are offered in type 316 stainless steel, Ni-Resist, and aluminum. Gears are of stainless steel, Hastelloy C or B, Ni-Resist, Monel, or Nickel, with replaceable carbon or ceramic wear plates and carbon, self-lubricating bearings.

VERTICAL DRIVE AGITATORS

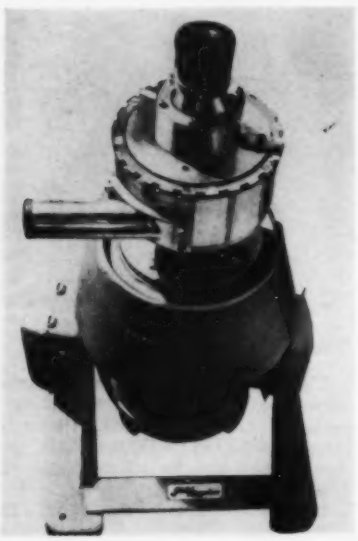
A complete line of heavy duty vertical drive agitators is available from the U. S. Mixer Division of Stockdale Engineering Co. The line features an output shaft bearing assembly designed to provide maximum rigidity and minimum shaft deflection, to assure constant shaft alignment under all loading conditions.

The bearing and shaft support assembly is designed to accommodate readily, long unsupported overhung shafts, with no "in tank" bearings required, a decided advantage in agitating material in deep tanks with a single agitator.

A built-in lubricating pump provides positive oil circulation to all bearings and dry well construction within the casing eliminates any possible contamination from leakage of oil or grease down the

NEW PRODUCTS & IDEAS

output shaft. Service points are centrally located on one side of the unit; a sight glass is provided to check oil circulation. The drive utilized in this entire line of agitators is available from 3 HP to 60 HP, in a wide range of speeds.

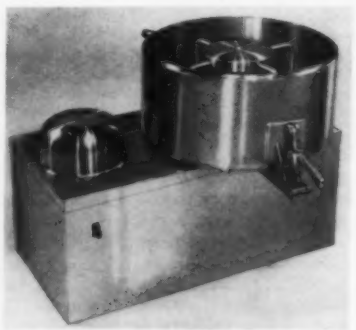


JET-MOGENIZER

The Jet-Mogenizer #30 is the latest and most productive model of the homogenizing equipment manufactured by Bushman Products, Inc. It is stated that because of its unusual design this low horsepower, compact homogenizer delivers as high as 500 gallons per hour, equal to other homogenizers with two or three times the equivalent horsepower.

The spline design is unique in that 380 splines in the rotor/stator have been deliberately thrown out of register so as to convert the fluid flow from a constant tythmic vibratory pattern into an intermittent variable one. As a result of this vibratory imbalance and the irregular hydronamic pressure impulses, subsonic effects are set up causing highly intensified turbulence. Violent interparticle attrition follows as the fluid mass is forcibly impacted through these restricted spline vents.

At a peripheral velocity of 4500 fpm the whirling processed particles vibrate at ultrasonic frequencies as they are impinged on the sonic blade. At this frequency continuous cavitation is generated within the processed particles resulting in a more completely dispersed, smoothly blended or uniformly emulsified product. The adjustment of rotor/stator clearance is through the screw movement of the stator head.



PILOT PLANT TURBINE MIXER

A new type pilot-plant size turbine mixer has been introduced by the T. L. Smith Co. The new mixer has a capacity of ½ cubic foot, making it suitable for pilot work or feasibility tests in chemical plants, as well as for production of pharmaceuticals or cosmetics. The unit requires no fixed mounting and is light enough to be carried by two men.

This turbine mixer is designed for either wet or dry blending, as well as slurry mixing. Stainless steel construction makes the mixer corrosion resistant and increases the range of chemicals which can be mixed. The mixing bowl is jacketed for heating or cooling with steam, hot or cold water, or refrigerants.

Other design features include a variable speed drive for positive control to match changing requirements, and an over-center door lock that provides a liquid seal on the bottom-dumping door.

AUTOMATIC FLAME PHOTOMETER

An automatic flame photometer for sodium and/or potassium analyses that eliminates sample preparation and continuously records results was unveiled recently by Technicon Instruments Corp.

With the AutoAnalyzer (R), sample preparation is eliminated. The sample plate is loaded, and 40 samples are automatically diluted, purified by dialysis, and pumped into a flame unit. Quantitative measurements are continuously recorded on a moving chart.

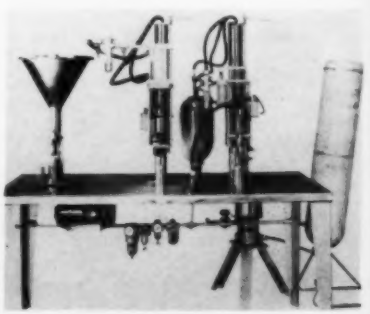
The recorder operates as an integral part of the continuous flow system. It comprises a balanced-ratio system in which the unknown and standard samples passing through it are continuously measured against a fixed reference. Tedious manual plottings are no longer required.

Since standards or known concentrations are treated in identical fashion as the samples, diluting error is eliminated by Technicon's continuous flow system. Another advantage achieved by the instrumental system is its elimination, by dialysis, of proteins which clog the burner.

PORTABLE HIGH-SPEED MIXER

An addition of portable models to its line of mixing equipment is announced by Specialty Machinery Corp.

Model PM 756 will accommodate batches of 300 gallons to 5 gallons. The unit will center in a 48" diameter tank which will need only 5" clearance underneath. The blade is raised by means of a foot pedal operated hydraulic system. It is available in variable and single speed models.



AEROSOL PACKAGING LINE

A low-cost semi-automatic aerosol packaging line is soon to be available from Kartridg-Pak Co. The new line, called the KP-1000, is a completely self contained unit, requiring only electric power, product and propellant to be put in operation. It is capable of producing up to 600 cans per hour. It is composed of a piston filler, a vacuum crimper, and a pressure filler (0 to 300 gm).

ideas unlimited ...

Felton

Patent Digest

Acid Stabilized Emulsions

N-SOYA N-ETHYL MORPHOLINIUM ETHOSULFATE COSMETIC EMULSIONS

U. S. Patent No. 2,852,434

Walter A. Taylor, Clinton, Conn., assignor to Chesebrough-Pond's Inc., New York.

Patented September 16, 1958.

This invention relates to an acid stabilized emulsion base for treating the skin to reduce roughness and redness, relieve dryness, heal chapping produced by these factors, remove callous skin, overcome cuticle roughness and hangnail conditions and heal injury caused by abrasion, water and alkaline materials. It also relates to a heat and acid stabilized emulsion base which may be employed in conjunction with emollients, medicaments and other additives as a lotion or cream for treatment of the skin.

It is the principal object of this invention to provide a stable acidic emulsion base which is a keratolytic agent and a stimulant for the sweat and sebaceous glands and the stratum germinativum. Another object of this invention is to provide an emulsion base capable of counter acting and preventing alkali and water trauma of the skin. Still another object of this invention is to provide an emulsion base which alone or in conjunction with emolient materials will supply oil and water to the interspaces of the stratum mucosum. A further object of this invention is to provide an emulsion base having a pleasant odor and appearance, a good consistency without being oily and sticky and which is stable for long periods of time when subjected to relatively high temperatures.

The dermatological properties of the N-soya N-ethyl morpholinium ethosulfate compounds . . . vary from batch to batch even though identical starting materials are employed. It is necessary, therefore, to subject each batch of N-soya N-ethyl morpholinium ethosulfate to biological assay before employing it in the emulsion bases of this invention. This biological assay consists of an acute eye irritation test upon albino rabbits which is performed by introducing 0.1 ml. of a 1.0 percent aqueous solution of N-soya N-ethyl morpholinium ethosulfate each day into the eye of the rabbit for a period of five days. If, at the conclusion of this assay, there was no evidence of severe irritation the 35 percent aqueous N-soya N-ethyl morpholinium ethosulfate was found to be useful in the emulsions of this invention.

The emulsions contemplated by this invention function in a manner distinctly different from that in which previously known lotions or creams have functioned. The emulsions described . . . are keratolytic agents and stimulants. They are capable of passing through the normally impermeable barrier of the outer skin and reaching the living tissues of the skin. In doing so they carry along water and emollients which restore the regions that have been de-oiled and dehydrated. Not only is the skin again made soft and pliable but the engorged vascular bed is soothed to overcome skin redness. The keratolytic properties of these emulsions restore the balance between the skin slough rate and the germination rate, and overcome keratin persistence on the outer layer of the skin.

Novel Thioglycollate Depilatory

DEPILATORY OF THIOGLYCOLLATE SALT IN GEL SOLUTION WITH COLLOIDAL EXCESS AND METHOD OF PREPARING SAME

U. S. Patent No. 2,823,168

Albert A. Stonehill, Plainfield, N. J. assignor to Ethicon, Inc., N. J.

This invention relates to a method of preparing a depilatory and the product resulting therefrom. More specifically it relates to a depilatory for use prior to surgical interventions. Patentee claims to be able to produce a depilatory which has greater depiling effectiveness and is less irritating than a depilatory formulated by the conventional method, despite the fact that lesser amounts of active ingredients are used. Depilatory contains, as the active ingredient, a compound of the formula

$$SH\text{-}CH_2\text{-}\overset{\overset{O}{\|}}{C}\text{-}OM$$

in which M is a metal selected from the class consisting of sodium, potassium, and calcium. The preferred active ingredient is calcium thioglycollate.

A complete example of a depilatory that can be prepared by the patentee's method is as follows

	Grams
Methyl cellulose (4000 centipoises for 2 percent solution	2.25
Thioglycollic acid	3.00
Calcium hydroxide	3.20
2,2′-dihydroxy-3,5,3′,5′,6′,-hexachlorodiphenylmethane	0.50
p-Diisobutylphenoxypolyethoxyethanol	2.00
Perfume	0.30
Sorbital	5.00
Water up to	100.00

In accordance with this method, it is possible to obtain a depilatory wherein the amount of the active ingredients in excess of that which is in true solution will be colloidally dispersed throughout the gel and to obtain a depilatory which will render the depiled skin area in an aseptic condition.

The effectiveness of such a colloidal dispersion and its lack of irritation is amply illustrated by comparing it with a formulation which has been prepared by the conventional method of first forming a salt which has depiling activity and then adding the salt to a base or carrier material.

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News and Events

M. G. deNavarre First President Of International Federation

On September 8 in Brussels, Belgium, the International Federation of Societies of Cosmetic Chemists became a reality with the election of Maison G. de Navarre of the Society of Cosmetic Chemists of the United States as its first president, and the appointment of a working committee consisting of Dr. R. H. Mariott of England, Dr. L. W. Masch of Germany and Dr. P. Velon of France. Eight countries were represented at a meeting held on September 7th and 8th, and the new Federation will include the Societies of Belgium, Switzerland, Germany, England, France, Spain, and the United States, whose representatives attend the meeting and also Denmark and Italy, who were not represented. Societies of other countries have already indicated an interest in the new Federation.

Sabbat J. Strianse, Chairman of the International Affairs Committee, who also represented the American Society, reported that work was begun on a new constitution and that many of the points upon which there was disagreement are now being worked out.

New York S. C. C. to Honor President of National Society

As has been the custom since its founding, the New York Chapter of the Society of Cosmetic Chemists has invited the incumbent president of the national society to be guest speaker at the closing meeting of the year.

On November 4, 1959, Savery F. Coneybear, President of the Society of Cosmetic Chemists, will be honored by the local chapter at a dinner-meeting to be held at the Hotel New Yorker, Terrace Room.

Mr. Coneybear, director of new products development for the Colgate-Palmolive Company, will speak informally on the general delineation of the affairs of the Society. In making the membership aware of the fiscal situation, reasons and effects of changes in the Society by-laws, the international relationships and other such problems as face the society, he hopes for better integration of the membership into the Society's affairs.

Mr. Coneybear will also recount his recent visits to the Chicago and Los Angeles Chapter meetings.

In addition to his talk, Mr. Coneybear will install the new Chapter officers for 1960.

Breck on European Visit

Edward J. Breck, president of John H. Breck Inc., recently returned to this country after an extended European business trip.

During his visit, Mr. Breck conferred with distributors of his firm's hair care preparations in Great Britain, France, and Switzerland. The major purpose of the meetings was a discussion of marketing and distribution of Breck Preparations and plans for future expansion for the company in European countries.

Mrs. Edward J. Breck accompanied him on the trip which was made over via the S. S. United States and return by Pan American Jet.

Shulton Names New Advertising Director

Gilbert J. Supple

Gilbert J. Supple was recently appointed advertising director of Shulton, Inc., it was announced by Frank N. Carpenter, vice president. Mr. Supple succeeds Walter P. Lantz who has been appointed director of market research.

Prior to joining Shulton, Mr. Supple was creative and television director at R. K. Manoff, Inc. Before that he held top creative and copy positions at Cohen & Aleshire; Doherty, Clifford, Steers and Shenfield; McCann-Erickson.

At Shulton, Mr. Supple will be responsible for the firms over-all advertising program, reporting to Mr. Carpenter.

BRECK FAMILY ON EUROPEAN VISIT

EDWARD J. BRECK, president of John H. Breck, Inc., Mrs. Breck and son Richard on the deck of the S.S. United States prior to their sailing to Europe on an extended business trip.

PAN AMERICAN JET POLAR FLIGHT CARRIES MAX FACTOR GIFT

AT TAKE-OFF CEREMONIES of Pan American's inaugural jet polar flight to England; Jack Klein (left), managing director of Max Factor, England, presents a special set of Max Factor's Hi-Society Lipsticks to Pamela Anne Searle, Miss England in this year's Miss Universe Pageant, and Bob Murray of Pan American Airlines, who placed the set aboard the plane as a personalized gift from Max Factor to Lady Gillett, wife of Sir Harold Gillett, Lord Mayor of London.

Hi-Society Lipsticks On Polar Flight

Pan American's new jet polar flight, carrying a personalized Max Factor gift for Lady Gillett, wife of Sir Harold Gillett, Lord Mayor of London, was inaugurated August 26 as the airline's huge Boeing 707 took off on a 10 hour trip from Los Angeles to London.

During ceremonies, prior to take-off at Los Angeles International Airport, a set of Max Factor's Hi-Society Lipsticks and oval mirror cases was placed aboard the jetliner as a special inaugural flight presentation for Lady Gillett.

Jack Klein, managing director of Max Factor, England, who was in Hollywood at the time, participated in the ceremonies and presented the gifts to Pamela Anne Searle, Miss England in this year's Miss Universe Pageant, and Bob Murray, vice president, Pan American Airlines, who then officially carried it aboard the plane.

Firmenich Has New West Coast Office

Firmenich and Company has announced the removal of its West Coast offices to 1416 Crestview Court, Los Angeles 24, California. The new telephone number is: Crestview 5-7469.

The office will continue under the direction of Clive N. Ross.

New York SCC Announces Meetings For 1960

The New York Chapter of the Society of Cosmetic Chemists has recently announced their 1960 schedule of meetings:

January 6, 1960
February 3, 1960
March 2, 1960
April 20, 1960 (Ladie's Night)
September 7, 1960
October 5, 1960
November 2, 1960

Meetings will continue to be held at the Hotel New Yorker. Cocktails at 5:30 P. M. in the New Orleans Room. Dinner at 6:30 P. M. in the Terrace Room.

Reservations should be made in advance by contacting the secretary of the New York Chapter.

Philadelphia College Faculty To Give New Television Series

Members of the faculty of the Philadelphia College of Pharmacy and Science are offering an entirely new series of television broadcasts in conjunction with the university of the Air, WFIL-TV, Channel 6, Philadelphia, which started September 30. Broadcast each Wednesday from 11:35 A.M. until noon, the general theme is: You and Your Health. Among the program titles are: "Food Additives," "Drugs of Tomorrow," "Dry Skin," and "The U. S. P.—Guardian of Your Health."

Each lecture will be taped and rebroadcast over the same station one week later at 6:50 A. M. and at other times through television broadcasting stations in Binghamton, N. Y., New Haven, Conn., Lebanon, Pa. and Altoona, Pa.

Naarden's K. Brackman Complete's 40th Year

On August 11, last, K. Brackman celebrated the anniversary of his fortieth year of service with N. V. Chemisch Fabriek "Naarden," Naarden-Holland.

Mr. Backman, in 1919, entered the service of "Naarden" and is now their general manager and technical adviser. Since joining "Naarden" he has played a definite part in the development of the firm from a small factory to the organization it is today. For the innumerable newcomers who have since taken their place as valuable members of the firms technical staff, Mr. Brackman has proved to be an excellent adviser, according to a company spokesman.

Mr. Brackman obtained a degree in Chemical Engineering from Delft University in 1914.

International Flavors Consolidates Canada Operations

The flavor and fragrance operations of International Flavors & Fragrances (Canada) Ltd. are now consolidated at one location in Toronto, under the direction of Fred Crowhurst, vice president, it was announced in New York during September.

This move, according to Charles P. Walker, president of International Flavors & Fragrances Inc., will enable the company to better serve the requirements of the growing Canadian market, particularly in fields such as soap, cosmetics, food products, and soft drinks.

International Flavors & Fragrances (Canada) Ltd. was recently formed through the merger of van Ameringen-Haebler (Canada) Ltd. and Polak & Schwarz (Canada) Ltd., as part of the world-wide organization which operates manufacturing plants, laboratories and creative facilities in 16 countries.

Dragoco Purchases Austrian Firm

Dragoco has completed arrangements for the purchase of the well-known and established essential oil company, Schimmel, in Austria.

Welcoming this new member of the Dragoco family, Dr. Gribou, vice president, said that the resulting expansion of Dragoco's manufacturing facilities will make it possible to give even better service to its customers all over the world.

Colgate-Palmolive Company To Build Research Center

The Colgate-Palmolive Company announced in September that it will establish a multi-million dollar center for basic and applied research adjacent to the Rutgers University Science Campus at New Brunswick, New Jersey.

Edward H. Little, chairman of the board and president of the Company, said the installation will represent a major step forward in Colgate-Palmolive's plans to widen its research program to fit the expanding horizons of its business. Mr. Little added:

"Our scientists at the new Colgate-Palmolive Research Center will seek to extend the boundaries of knowledge in many scientific fields. From their efforts in the years ahead should come new and improved products of value to people everywhere."

"Among the factors influencing our choice of the research site," said Dr. John R. Brown, Jr., Colgate Palmolive's vice-president for research and development, "were proximity to Rutgers University with its creative and cultural environment, and the availability of sufficient land to permit future expansion of our research activities."

Ground will be broken in about eight months and the two-story center is scheduled for completion by late 1961. The Turner Construction Co. has been selected as the general contractor for the project.

Toni Hair Care Line Sets Record

Within six months of its national introduction, Toni's hair accessories line has already topped sales expectations for the entire year, it was reported by Stuart K. Hensley, Toni president, at a recent sales meeting in Chicago.

He attributed the new line's success in this highly competitive field to "the Toni name, attractive packaging of the line's 55 hair care and styling items, streamlined self-service display fixtures and the intensive merchandising efforts of the company's sales division.

Reviewing the line's short but successful history, Hensley pointed out that Toni hair accessories were first introduced in the midwest on a regional basis in August 1958. The midwest test was so successful that Toni began national marketing of the line in March of this year.

The overall retail market for hair accessories was estimated at $140,000,000 by Hensley.

23rd Annual Packaging Competition

An entire banquet room at the Sheraton East Hotel in New York City had to be converted into a mock-up variety store with counters, counter cards, racks, storage bins, and other equipment to accommodate the wide assortment of packaged merchandise totaling over 1,100 entries in Variety Store Merchandiser's 23rd Annual Packaging Competition.

COLGATE-PALMOLIVE TO BUILD RESEARCH CENTER

AN ARCHITECTURAL RENDITION of the Colgate-Palmolive Company's multi-million dollar center for basic and applied research to be constructed adjacent to the Rutgers University Science Campus at New Brunswick, N. J. The new Colgate-Palmolive Research Center will be located on a 75-acre site overlooking the Raritan river. Two main laboratory wings, each 250 feet long, will extend to the rear from the central axis corridor. The three smaller wings to the front of the building, shown in the drawing, will be occupied by the administration sections, an information center with a large library and seminar room, and a cafeteria.

Winners in the cosmetic and toilet goods division were: Gold Award—Dura-Gloss Lipstick, Dura-Gloss Division of Ar. Winarick, Inc.: Silver Awards—Pic-A Puff Cosmetic Cotton, Johnson & Johnson; Gillette's Adjustable Razor, Gillette Safety Razor Co.; Cutex Mira Base Northam Warren Corp.; Trim Emery Board—"Purse Pak," W. E. Bassett Company.

Dr. Donald Mackay To Address Perfumers

The impact of recent developments in gas chromatography and ionization detection upon the perfume industry, particularly in regard to odor measurement will be the subject of an address "The Instrument 'Nose' Best" by Donald A. M. Mackay, Associate Director of Research, Evans Research and Development Corporation at the meeting of the American Society of Perfumers at the Advertising Club, 23 Park Avenue, N. Y. on October 21, 1959 at 6 P.M.

Fair Trade Drug Prices Found Less Inflationary

Fair trade prices of drug store products have done a far better job of resisting inflation than non-fair trade prices, according to a study by the Bureau of Education on Fair Trade made public in September at the annual convention of the National Association of Retail Druggists in St. Louis.

Entitled "Fair Trade and Drug Prices," the study presented by Maurice Mermey, Bureau director, traces price behavior—fair trade and non-fair trade—from the beginning of the fair trade era in 1931.

Mr. Mermey said that the bureau's most recent study covers "The only full studies made of the prices of drug store products—including large numbers of items and long periods of time. The bureau reaches these conclusions:

1. "In the drug store product field, fair trade prices have done a far better job in resisting inflation than have non-fair trade prices.
2. "Over a period of 12 years, 1947-1958, fair trade prices of drug store products have risen less than all prices as reflected by the Consumer Price Index.
3. "Over the entire era of fair trade, beginning in 1931, fair trade prices of drug store products have shown remarkable resistance to the pressures of inflation . . . greater resistance than most other products and services.
4. "As to the cost of medical care, as reported in the Consumer Price Index, prescriptions and drugs are much less a factor in the 1958 cost, compared with 1947, than physician's fees and hospital rates.
5. "The American Consumer in general has benefitted by the application of fair trade to drug store products."

Chicago Chapter of SCC Hears Ken Klausner

Ken Klausner of Chemical Technical Service, General Chemical Corporation addressed the Chicago Chapter of The Society of Cosmetic Chemists October 13. The meeting, held at Henrici's Restaurant in the Merchandise Mart, heard a paper entitled, "A Preliminary Study of Corrosion Inhibitors for Use in Aerosols."

The speaker was graduated from New York University, and did graduate study at Brooklyn Polytechnic. Before joining General Chemical Corporation in 1957, he was employed by the Colgate-Palmolive Company.

November *Seventeen* Provides Teen-Age Advice

Two articles in the November issue of *Seventeen* Magazine will offer teen-age girls make-up tips and suggest cosmetics for holiday parties and proms.

A major editorial feature, "The View at His Shoulder," tells girls how to correct feature flaws with their everyday make-up, plus a lighter and darker shade of liquid foundation. The four color spread also illustrates how to use an eyebrow pencil, mascara and lipstick brush to minimize or highlight features.

In the monthly "Dressing Table Talk" column, *Seventeen* recommends cosmetics from six leading manufacturers.

Francis Chilson Addresses New York Cosmetic Chemists

A record crowd braved the soaring temperature on September 9, 1959, to hear Mr. Francis Chilson address the New York Chapter of the Society of Cosmetic Chemists at the Hotel New Yorker.

In reminiscing his experiences, Mr. Chilson, an industrial consultant, gave an interesting and provacative talk. Besides drawing comparisons between the financial and convenience aspects of the one-story vs. multiple-story structure for research, he indicated the pro's and con's of windowless laboratories.

He also discussed the necessity of good thinking with respect to research. He advocated that since nobody knows what field the future lies in, research should not be confined to any one thing. As an illustration he recalled the early antibiotic research chemists who studied the use of antibiotics only as a therapeutic and neglected other uses, such as cosmetics.

Schedule Norelco Microscope School For November

The Fifth Norelco Electron Microscope School will be held at the hotel Victoria in New York City during the week of November 16-20, 1959 under the sponsorship of the Instruments Division, Philips Electronics, Mount Vernon, N.Y.

Dr. R. W. G. Wyckoff, University of Arizona, Tucson, will direct the school activities and a number of prominent guest speakers will participate in the week-long program.

Subjects to be discussed include: Electron Microscope in Theory and Practice: Alignment and Care of an Electron Microscope: Problems and Instrumentation for High Resolution in Electron Microscopy; Methods of Sample Preparation; Electron Optical Techniques other than Electron Microscopy; contact Microradiography and X-ray Microscopy; Practical Problems Encountered in Electron Microscopy.

Morning meetings will be devoted to Lectures. Laboratory work will be performed at afternoon sessions using two types of electron microscopes, contact microradiography, X-ray microscopes, vacuum equipment and other accessory units.

On Friday, November 20, the afternoon meeting will cover a clinic on sample preparation and micrograph interpretation. This will be followed by question and answer period and a concluding review of the week's lectures and laboratory work by Dr. Wyckoff.

GCMI Semi-Annual Meeting At Phoenix In November

The semi-annual meeting of the Glass Container Manufacturers Institute, Inc., an association of sixty-nine manufacturers of glass containers, metal and molded closures, and supply industries, will be held at the Arizona Biltmore in Phoenix, Arizona, from Monday, November 9, through Thursday, November 12, 1959, according to Victor L. Hall GCMI's general manager.

General sessions will be held on Tuesday, Wednesday and Thursday mornings. Speakers include the Honorable Barry M. Goldwater, United States Senator from Arizona; president J. E. Wallace Sterling of Stanford University; Fred N. Dundas, GCMI president; industry representatives; and members of the GCMI staff.

McKesson & Robbins Will Open New Drug Division

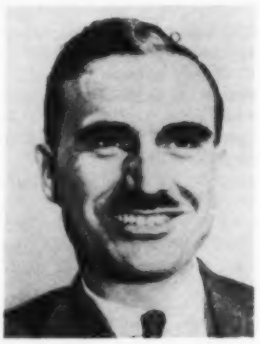
McKesson & Robbins, Inc. recently announced plans for opening a new wholesale drug division at Hicksville, Long Island, N. Y. David T. Daniel, vice president, said the move was directed by the growth of the company's business in Nassau and Suffolk Counties and is part of an over-all modernization program designed to improve its service to customers. Robert F. Kavan will be the new division manager.

Procter Medal to be Presented to Francis Boyer

The achievement award of the Philadelphia Drug Exchange, The Procter Medal, will be presented to Francis Boyer, chairman of the board of Smith, Kline & French Laboratories, it has been announced by Robert L. McNeil, Jr., president of the Exchange.

Awarded for the first time in 1953, The Procter Medal is conferred on an outstanding individual in recognition of his extraordinary service benefiting the health of the public and advancing the progress of the pharmaceutical industry. Mr. Boyer was selected as recipient because of his leadership in pharmaceutical progress for the past forty years.

Evans Chemetics Vice President On Round-The-World Trip



Robert A. Kramer

Robert A. Kramer, vice president in charge of sales of Evans Chemetics, Inc., will leave this month for a round-the-world business trip. Mr. Kramer will visit various scientific laboratories, chemical plants and governmental agencies of the more important countries in the Far East. He is expected to return to New York by the beginning of November.

MAGAZINE PRESS ENJOYS BONNE BELL HOSPITALITY

TYPICAL FRENCH FARE along with French wines was served at Bonne Bell's luncheon party for the press. At the head of the "family" table was Jesse Bell, president, and opposite him was Bonne Bell, vice president. Bob Middendorf, sales manager, is on Bonne's left.

Bonne Bell Holds Magazine Press Luncheon

Bonne Bell entertained members of the magazine press at a luncheon on September 17th at Le Chat Noir, named for the famous original in Montmartre. Jesse Bell, president of the New York cosmetic firm, and Bonne Bell, vice president, were host and hostess of the affair. Also attending was Bob Middendorf, sales manager, and Jim Bay, Boone Bell representative for the New York area.

Although the setting and menu were French, there was more than a dash of Scotch exclusive of the cocktails. French-Scotch was the shiny garbage can at the entrance of Le Chat Noir for Left Bank atmosphere but filled with purple and lavender flowers and tied 'round with a green and white Scotch plaid ribbon. And at each cocktail place was a plaid-wrapped Harry Lauder record of songs in which "bonnie" recurred as often as possible. These records served as souvenirs of the occasion.

Philadelphia BEAUTYRAMA Draws Capacity Crowds

The Philadelphia Inquirer's third annual BEAUTYRAMA, even more elaborate and more captivating than its two exciting predecessors, drew capacity crowds into the grand ball room of Philadelphia's Sheraton Hotel on September 9, 10, 11.

Delaware Valley woman and teen-agers flocked to the displays of cosmetics and perfumes, jammed the suites in which clinics were held, and packed the ballroom for the twice-daily showings of elegant international fashions.

Lilly Dache, who addressed the throng prior to each fashion show, called the show "fabulous." Exhibitors were equally impressed. Although they had enlarged their booths and retained additional personnel as a result of last year's increased attendance, they still found it difficult to accommodate the steady flow of spectators anxious to see the displays and demonstrations.

Retailers throughout Delaware Valley experienced an upsurge in sales of exhibited products during and after the exhibit, and it was noteworthy that other cosmetics and perfumes, those not displayed at the show, did not share in this upsurge.

The unusual showings of fashions created by outstanding designers throughout the world focused attention on the close relationship of beauty aids and apparel. Glamorous models, their beauty enhanced by the latest cosmetic creations, paraded down the runway in exquisite gowns and dresses designed in France, Italy, Japan, England and many other countries.

Spectators were given practical advice and good-grooming hints at the beauty clinics held during the three-day event, with 45 clinics for women and 27 for teen-agers. They were lectured on a variety of subjects, such as "Accent Your Personality with Perfume," "The Art of Applying Make-up," "Hands on Review," "Eye Make-up Will Catch his Eye," "Diet and Exercise for Figure Perfection," "Beautiful Hair for You," "Poise and Grace for Teen-agers," and other aspects of beauty care.

Lecturers and exhibits represented the following companies: Elizabeth Arden, Helena Rubinstein, Max Factor, Prince Matchabelli, Simonetta Perfumes, Coty, Cutex, Bonne Bell, Lydia O'Leary, Norelco, Lilly Dache, Breck, Marie Earle, Sardeu, Roux, Dana Perfumes, Parfums Caron, Yardley, "His" Toiletries for Men, Lucien LeLong, Philadelphia Modeling and Charm School and Gary-Elliot Salons.

Tickets for BEAUTYRAMA were priced at 75 cents, and the policy of neither samples nor sales was continued.

National Chemical Credit Assn. Resumes Meetings

The national Chemical Credit Association, Eastern Division, resumed its series of monthly meetings September 17, with a luncheon at the Vanderbilt Hotel, New York City.

CAPACITY CROWD AT PHILADELPHIA BEAUTYRAMA

HELENA RUBINSTEIN CONSULTANTS were busy throughout the day passing on beauty secrets to women and teen-agers at The Philadelphia Inquirer's Beautyrama. The third annual pageant of cosmetics and perfumes drew capacity crowds.

Guest speaker was Robert Wiener, C. P. A., whose topic was "Committee Safeguards in Debtor-Creditor Proceedings." Mr. Wiener is on the faculty of Pace College and is chairman of the New York Society of C.P.A. Committee of Insolvency.

The Eastern Division, made up of 47 chemical companies, will hold its meetings the third Thursday of each month, starting in September and running through June of 1960.

Serving as chairman for 1959-60 will be O. C. Yaeger, Rohm & Haas Company.

Leendert Hoejenbos Marks Fortieth Year With Polak Frutal Works

Dr. Leendert Hoejenbos, managing director of Polak's Frutal Works, N.V., Amersfoort (Holland), associated company of Polak's Frutal Works, Inc., Middletown, N. Y., recently celebrated his 40th year with the company. To observe this anniversary, his associates tendered him a dinner, on which occasion Mr. Jacob Polak, one of the co-founders and chairman of the board, presented him with a pair of antique silver chalices. Personal gifts from many friends were also presented and testimonials were given by Mr. J. E. Meihuizen, co-director of the Amersfoort firm and Mr. R. de Kat, managing director of Soflor, Ltd., Perivale (England), one of P.F.W's associated companies, who himself celebrated his 40th anniversary with the company two months earlier.

In 1931, when Mr. Henry Polak, brother of Mr. Jacob Polak and co-founder of the company died, Mr. Hoejenbos was called upon to take over technical management of the firm and in 1940, at the outbreak of World War II, when the Polak family left for the United States, he shouldered the overall management of the company under very trying conditions.

Drs. Hoejenbos has published a number of articles on flavoring and aromatic materials, of which undoubtedly the most well known is his work with the late Dr. Coppens on the constituents of raspberry and strawberry juice, being recognized as classic in this field.

William W. Huisking

New DCAT President Elected!

William W. Huisking has been elected president by the members of the Drug, Chemical & Allied Trades Association, at the annual convention at the Sagamore Hotel, Lake George, New York, on September 18th. He succeeds Ralph A. Clark.

Other officers elected include: James Day—Dow Chemical Co.—vice president; Wm. J. Schieffelin, III—Schieffelin & Co.—treasurer; William J. Quinn—Merck & Co., Inc.—counsel, Helen L. Booth, executive secretary.

The association was formerly known as the Drug, Chemical & Allied Trades Section of the New York Board of Trade, and the name change was voted in the business session.

MORRIS R. SHLENSKY of Katz Drug Co., is presented with a testimonial plaque by Boone Gross, Gillette president, as Harry Sylk (left) of Sun Ray Drug, Wilbur E. Dewell, Joint Defense Appeal chairman, and Charles Green (right) of United Whelan Corp., look on. The Waldorf-Astoria testimonial dinner was the industry's annual get-together for the Joint Defense Appeal agencies.

Sardeau Gains Injunction Against Korvette, Inc.

Sardeau, Inc., manufacturers of Sardo Lipodermic Bath, announce that they have secured an injunction against E. J. Korvette, Inc., in the Supreme Court of the State of New York forbidding the sale of Sardo products at less than the fair-traded price.

SCC Medal Award Dinner And Dance To Be Held In December

The annual meeting of the Society of Cosmetic Chemists, together with their Medal Award Dinner and Dance, will be held on December 2, 1959, at the Commodore Hotel, New York City.

The 1959 Medalist has been chosen by the Medal Award Committee, and Maison G. deNavarre, Chairman of the Medal Award Committee, has announced the selection of Dr. William S. Gump, Research Chemist for Givaudan-Delawanna, Inc., as this year's medalist.

D. F. Anstead Visits American Cosmetic Manufacturers

D. F. Anstead, managing director of D. F. Anstead Ltd., Romford, Essex, England, arrived in the United States on September 20 for a two-week stay. During his visit he contacted cosmetic manufacturers in general, as well as his American principals which include American Cholesterol Products, Inc., Thomasset Color Co., Whittaker, Clark & Daniels, Inc., and Van Dyke & Co.

D. F. Anstead Ltd. are color specialists, serving Great Britain and much of Continental Europe.

DCAT, St. Louis Elects New Officers

The Drug, Chemical and Allied Trades Association of St. Louis announces the re-election of the following officers. President, Fred J. Lence, Abbott Laboratories; 1st Vice President, Philip A. Gunn, Dick Dunn Drug Products Co.; 2nd Vice President, Norman A. Dietz, Julius Blackman Corp.; Secretary and Treasurer, William J. McMillan, Waddell & Reed, Inc.

Elected to the board of directors: Robert H. White, Parke-Davis & Company; E. L. Young, *St. Louis Post Dispatch;* Milton H. Giessing, Abbott Laboratories; Fred W. Grabenschroer, Winthrop Laboratories; W. E. Steinkamp, Kingston Pharmacy.

D'Orsay Uses Humor In Perfume Ads

D'Orsay Sales Co. will use humor in its perfume advertising this fall, according to a recent issue of *Advertising Age*.

A series of cartoons will illustrate D'Orsay's campaign for its Intoxication perfume. The theme: "Something wonderful happens when you wear Intoxication by D'Orsay."

In the pixyish drawings, this "something wonderful" ranges from a statue coming to life to a woman being followed by a man walking airily on his hands.

The humorous approach was decided upon for D'Orsay because "when people buy perfume, they buy a mood, not a bottle.

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DR. ERNEST GUENTHER, Vice President and Technical Director of Fritzsche Brothers, Inc., guest speaker, who discussed "Production of Essential Oils Around the World," and dais guests, all members of Cosmetic Career Women: Josephine Catapano, van Ameringen-Haebler, a division of International Flavors & Fragrances, Inc., Agnes Korte, Givaudan-Delawanna, Inc.; Frances Kistler, Colgate-Palmolive Company; Grace A. Hufner, Beauty Editor, Fawcett Women's Group, Chairman of the Luncheon; Mysie Emmet, Albert Verley Company; Gertrude Freeze, Dodge & Olcott, Inc. The luncheon was attended by over 100 women.

St. John's Holds Open House At College Of Pharmacy

St. John's University College of Pharmacy held an "Open House" during the week of October 5 through 9, the period designated by presidential proclamation a National Pharmacy Week, it was announced by Dr. Andrew J. Bartilucci, Dean of the College of Pharmacy.

During the "open house" the public was given an opportunity to visit the classrooms and laboratories of the College of Pharmacy while the school was in session. Special equipment used in the large scale production of pharmaceuticals was exhibited.

Visitors were given a chance to see first hand the new facilities at St. John's and some of the research for development of new medicine which is in progress.

Lee Bristol, Jr. Speaks To Suggestion Systems Assn.

Dr. Lee H. Bristol, Jr. Director of Public Relations, Bristol-Myers Co., spoke about creative thinking and motivation in a featured address before the National Assn. of Suggestion Systems recent convention.

Dr. Bristol has long been associated with many areas of ideation; as a public relations director, advertising manager, and as a member of the University of Buffalo Creative Problem Solving Institute.

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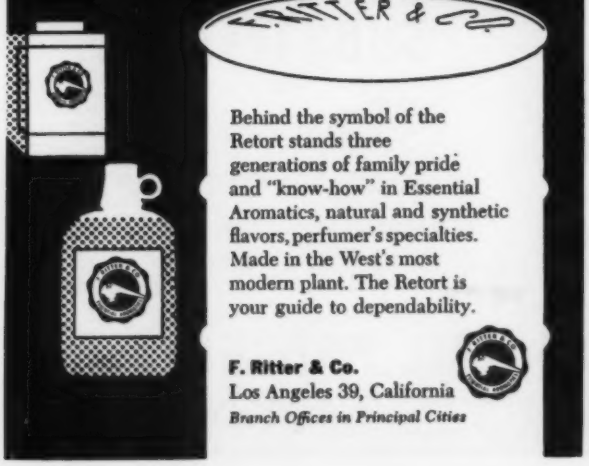

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NBC EXECUTIVE ADDRESSES CIBS

EUGENE WHITLOCK, JR., a Unit Manager for N.B.C. was the speaker at the recent CIBS' Luncheon at the Warwick Hotel. His topic: "T.N.T. . . . Television, Today, Tonight and Tomorrow." Mr. Whitlock discussed various problems which confront the running of T.V. shows, commercials, complaints, etc. Shown after the meeting (l. to r.) William Jaeger, CIBS' Director, Mr. Whitlock, John Duncan, CIBS' President, and Edgar Ellis, CIBS' Director.

Hooker Chemical Announces New Managerial Assignments

Several managerial changes have been instituted in the sales department of the Eastern Chemical Division, Hooker Chemical Corp., according to a recent announcement by John S. Coey, Division sales manager and a corporate vice president.

William L. Gillespie has been appointed product manager, organic chemicals, succeeding Robert B. Boyd, recently promoted. Mr. Gillespie had been manager, sales administration.

Succeeding Mr. Gillespie is James S. Walker, formerly manager, technical service. Lloyd S. Bovier, formerly administrative assistant to the director of research, has been appointed manager, market development, a newly created post in the Division's sales department; and Kenneth R. Ewing, formerly a technical service representative, is now supervisor, trichlorethylene. Mr. Ewing succeeds Stanely A. Mattison, now Hooker's Washington manager.

In a more recent announcement, Samuel M. Russo has been named senior methods analyst.

Union Carbide Announces Sales Personnel Changes

New assignments for five men in the Sales Department were recently announced by Union Carbide Chemicals Co.

Technical representatives transferred are: Arthur A. Boucher to the New York District from Buffalo, and Malcolm H. Mackay to the Buffalo District from Newark.

Having completed the sales training program, the following men have been named technical representatives: William R. Britton to the Moorestown, N. J. District; Donald M. Sullivan to the Cleveland District; and Frank S. Wimer to the Newark District.

OBITUARY

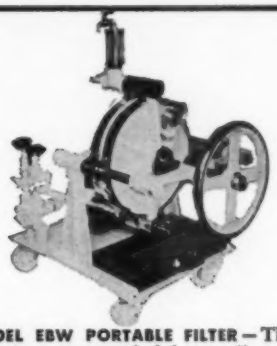
Alexander Boyle

A. R. M. Boyle

Alexander Robert Mill Boyle died at his home in Darien, Connecticut at the age of 71. He had been suffering from a heart condition for several months.

Mr. Boyle had been treasurer and a director of Lehn & Fink Products Corporation of New York for 32 years. He had joined the firm in 1925 as director and secretary-treasurer, and retired in July 1, 1957. He had continued after his retirement as a director and consultant on fiscal matters.

FILTERS AND BOTTLE FILLERS
for the Perfumer



MODEL EBW PORTABLE FILTER — This filter is recommended for small capacity requirements. Accomodates from 4 to 8 12¼" dia. filter disks. Easy to set-up and operate.

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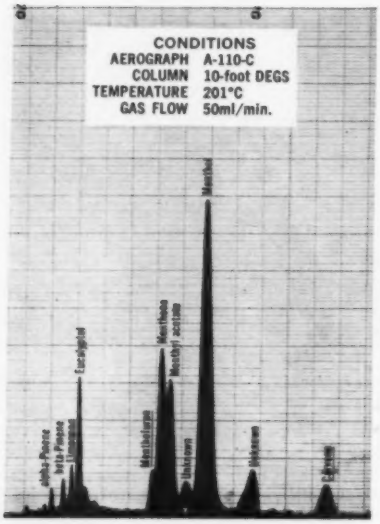

Carvone peak result of adding approximately 1 percent spearmint oil. Sensitivity increased 8 times for carvone peak.

Doing It the
Easy Way

Accurate terpene analysis need not be laborious. With our modestly-priced Aerograph ($1785 complete with recorder) you can *easily* analyze *any* terpene. For example, consider this analysis of contaminants in Jefferson peppermint oil.

The No. 1 villain in peppermint oil is menthofuran. The greater the percentage of this component, the lower the quality – and price. In just 12 minutes, we completed an accurate and reliable analysis. Even minor contaminants such as spearmint (represented by the carvone peak) were easily spotted.

As always, we are happy to work on your problem. Send us your terpene sample for a free analysis. We'll mail you a chart and a report of results.

--Wilkens----------
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Aromatic Materials

Nerone

Nerone supplies synthetically the odor effect of the exotic keton portion of the essential oils which as a class of ingredients has been largely unavailable to the perfumer. The perfumer learns to appreciate the importance of this class of ingredient for creating natural smelling geranium, lavender, neroli, vetiver, bergamot, lemon and petit grain compositions by using Nerone in these types.

Although Nerone is not a new note an almost identical note being discernible in petitgrain oil, it offers many possibilities for original perfumes since it is a concentrated note, free from terpene and ester components that would hamper its adaptability.

Nerone was employed in typical bergamot and lavender compositions for soaps and detergents. These blends were evaluated in soap cakes with excellent results, indicating Nerone to be very useful in compounds where stability and performance are important.

Nerone and the compounds of lavender and bergamot containing Nerone were incorporated into a typical heavy duty liquid detergent at a concentration of 0.5%. Upon the completion of accelerated aging tests the samples were evaluated and found to be almost equal in odor character and strength as the unaged samples.

Some iols, such as the citrus oils and particularly bergamot, show very poor performance in soap. Many perfumers prefer to use a blended bergamot composition which has better strength than the natural oil. Such bergamot compositions invariably have more natural scent when they contain a suitable amount of Nerone.

Other essential oils which perform well in soap, cause the perfumer concern when he compares their production with the potential requirements of a successful nationally-sold product. The necessity to reduce the amount a natural oil in a perfume presents a problem which fortunately can be solved by the use of an effective fortifier. Nerone fortifies petitgrain, vetiver, and geranium with excellent retention of natural odor.

The use of Nerone is recommended to the perfumer for essential oil problems concerning petitgrain, oakmoss, bergamot, neroli, patchouli, vetiver, geranium, clary sage, lavender, lemon and orris concrete.

Some perfumers will find that Nerone can be exploited as a versatile ingredient for soap perfumes by using it as such in creating new compositions. The advantages of this new material to the soap perfumer are most readily demonstrated by this approach.

Soap bouquets, including citrus, rose-geranium, jasmin-rose, and woody types, were made in which Nerone was a constituent. For comparison, a composition was made with the same ingredients but omitting Nerone. The compositions were incorporated into soap cakes at 1% so that the same perfumes could be compared both with and without Nerone.

Various materials were combined with Nerone in different proportions and several tempting odor themes were discovered. For example, a mixture of 43% hydratorpic aldehyde and 57% Nerone gave a spicy green fragrance that suggested a pungent "Aldehydic" note with a violet undertone. A composition containing 22% of the mixture was created along this line. **Givaudan-Delawanna, Inc.**

Myralia

Aromatic Products, Inc., announces a delightful new fragrance called "Myralia". It is an ideal blend of light, floral top notes with a clean, fresh and long-lasting background. This fragrance may be used effectively in shampoos, powders, bath oils, bubble bath, sachet, hair oil, pomade, creams and lotions.

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PERSONALITIES

Edward Onyskow

Edward Onyskow has recently joined the ranks of Dodge & Olcott sales staff in the New York area. He began with D&O in 1953, first as analytical chemist, then research chemist, research division. During the last year the role of sales correspondent was added to his duties.

Rear Admiral William H. Brockman, U. S. N. (Ret.) has been named as director and vice-president of purchases of Century Chemical Corp., New York, N. Y. Admiral Brockman was, until recently, president of Bellanca Corp., and president and chairman of the board of the General Development Corp.

Claude May has been appointed assistant advertising manager in the international division of Max Factor & Co. Mr. May will headquarter at the company's home office in Hollywood and will be responsible for coordinating all Max Factor branch advertising.

George K. Nelson, director of development for Archer-Daniels-Midland Co. the past four years, has been named manager of the company's chemical products division, it was announced by W. G. Andrews, executive vice-president-chemical group. He was instrumental in organizing ADM's development department. Prior to that he did product development work for Shell Development Company.

Dr. Herman J. Kohl, chairman of the board and president of Norda Essential Oil and Chemical Company, Inc., has announced the appointment of **Fred J. Rowse** as vice president. Mr. Rowse has been associated with Norda for the past 21 years.

Marvin E. Winquist

A surfactants section keyed to the interests of the soap and detergent industry has been established in the technical service and development department of the Dow Chemical Company. **Marvin F. Winquist** was named to head the new section which will be responsible for the development of the Dowfax line of surfactants and for technical liaison with the industry.

Robert Muecke

Robert Muecke has been named advertising manager of the Tussy Division of Lehn & Fink Products Corp., Paul Carey, vice president and general manager of the Tussy Division, has announced. Mr. Muecke was formerly sales promotion manager for the division.

Nate Fretz became associated last April with Roubechez, Inc., of New York, having previously been connected for several years with Verona Chemical Company, and prior to that for over twenty-five years with Dodge and Olcott Company.

Charles P. McClelland

Appointment of **Charles P. McClelland** as associate director of the Technical Service Laboratory, Tarrytown, New York has been announced by Union Carbide Chemicals Company, Division of Union Carbide Corporation. In his new position, Mr. McClelland will administer Carbide's university fellowships supported by the marketing group, follow customer requirements for improved specification standards for industrial chemicals, co-ordinate technical service laboratory training functions, and also customer service activities.

The appointment of **Kenneth W. Keller** to the new position of director of merchandising and promotion, Warner-Lambert Products Division of Warner-Lambert Pharmaceutical Company, was recently announced. Mr. Keller was formerly director of retail marketing for the LePages Division of Johnson & Johnson.

William H. Dunney, Jr. vice president and director of Ungerer's fragrance laboratories, has just returned from a business trip to the northwest and Canada. Several side trips were made to interesting places like Banff and Lake Louise.

The appointment of **Frank P. Corso** as research and development field representative in the industrial products section of the Colgate-Palmolive Company's household products research and development department has been announced by Richard B. Wearn, director of research for household products division. Mr. Corso joins Colgate from the American Cyanamid Co. where he was chief control chemist in the surgical products division.

John N. Carroll

John N. Carroll has been elected a director of The George W. Luft Co., Inc., according to an announcement by Constance Luft Huhn, president. Mr. Carroll is vice president in charge of sales for Tangee, which he joined in 1958.

Kenneth R. Hansen, a member of the research and development department of the Colgate-Palmolive Toilet Articles Division, has been elected chairman-elect of the Staten Island subsection of the American Chemical Society's New York Section. Mr. Hansen's term as chairman will run from September 1960 through September 1961.

The promotion of **Thomas J. McEwan** to the new position of Marketing director—new products, Hudnut-DuBarry Division of Warner-Lambert Pharmaceutical Co., was recently announced. Mr. McEwan, who joined Warner-Lambert in 1946, has been merchandising director for proprietary medicines, cosmetics and toiletries for the past year.

The appointment of **George W. Glicker** as new division credit manager in the controller's department of the chemical specialties division has been announced by Pennsalt Chemicals Corporation. Mr. Glicker, who began his official duties August 7, comes to Pennsalt from E. I. duPont deNemours, where he was a credit analyst for seven years and from the Supplee-Biddle-Steltz Co., where he was assistant to the credit manager.

The appointment of **Edward P. Gasser** as a research statistician in the newly-created statistical planning and analysis section of Colgate-Palmolive Company's corporate research and development department, has been announced by Dr. Joseph H. Brant, director of corporate research. Utilizing statistical techniques, Mr. Gasser will assist the company's research and development personnel in organizing and designing experiments so they may yield the maximum amount of information.

The appointment of **Leon M. Miles** as product manager of Shulton, Inc., has been announced by Richard N. Parks, vice president-sales. Mr. Miles will plan and coordinate the marketing program for Desert Dri, 3-Way Curl Spray and other new products now being prepared for marketing. Prior to joining Shulton, he was marketing supervisor for Needham, Louis & Brorby, Chicago and was with the Chicago office of Young & Rubicam.

F. J. Hailer, Jr. has been named to represent Ungerer & Company in the New England area. Mr. Hailer succeeds the late Warren G. Kell who served Ungerer faithfully for many years in that territory.

The appointment of **Dr. Gerald Orgel** as radiobiologist in the Colgate-Palmolive Company's Biological Research Laboratories at New Brunswick has been announced by Dr. Joseph H. Brant, director of corporate research. Dr. Orgel, will be concerned with the radioactive tracer work conducted at the laboratories.

B. Fainberg was appointed general manager of Dragoco, Inc., according to an announcement by Dr. H. G. Gribou, vice president. Mr. Fainberg, prior to his appointment, was head of Dragoco's international division.

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STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of AMERICAN PERFUMER AND AROMATICS, published monthly at Bristol, Conn. for October 1, 1959.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, James H. Moore, Jr., 48 West 38th St., New York 18, N. Y. Editor, Walter M. Bone, 48 West 38th St., New York 18, N. Y. Managing editor, None. Business manager, John H. Muller, 48 West 38th St., New York 18, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Moore Publishing Co., Inc., 48 West 38th St., New York 18, N. Y.; James H. Moore, Jr., 48 West 38th St., New York 18, N. Y.; H. O. Andrew, 48 West 38th Street, New York 18, N. Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears on the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

Walter M. Bone
(Signature of editor)

Sworn to and subscribed before me this 25th day of September, 1959.
[SEAL] MORRIS HOCHBERG
(My commission expires March 30, 1960)

Fay Mowery Moore

Fay Mowery Moore, designer and artist, has become associated with Aerosol Techniques, Inc., of Bridgeport, Conn., according to a recent announcement by H. R. Hubbard, president. With the appointment, believed to be the first of such specialists by an aerosol packaging company, ATI makes available to marketers of cosmetics, toiletries, pharmaceuticals and other fields, Miss Moore's counsel and creative talents in the development of package and concomitant ideas.

Eugene W. Wooten, has been appointed to the newly created post of Director of Industrial Relations for Max Factor & Co. Operating under the new division will be the Personnel Department and the Wage and Salary Department.

Gabriel Appleman

Gabriel Appleman, former director of engineering for Foster D. Snell, Inc., has been named plant engineer for the Ansbacher-Siegle Corporation, pigment manufacturing subsidiary of Sun Chemical Corporation.

He had been with the Foster D. Snell organization since 1952, and in 1957 was named director of engineering for that company.

Dr. John W. Hoopes became director of the chemical engineering department in Atlas Powder Company's chemical division on October 1, succeeding Marshall T. Sanders who has been director of the department since 1945, will become technical assistant to the executive vice president, Edward J. Goett.

John de Elorza

John de Elorza has been elected a director of the Davega Stores Corporation of New York. Mr. de Elorza is president of Old Empire, Inc., contract packagers and manufacturers of private brand marketing. He is also a former president of the National Assn. of Private Brand Manufacturers.

Donald H. Brewer, formerly senior vice president of Container Corp. of America, has been elected vice president of Rexall Drug & Chemical Co., according to a recent announcement by Justin Dart, president.

Mr. Brewer will be located in the company's world headquarters in Los Angeles, and will be in charge of all the company's plastics processing operations.

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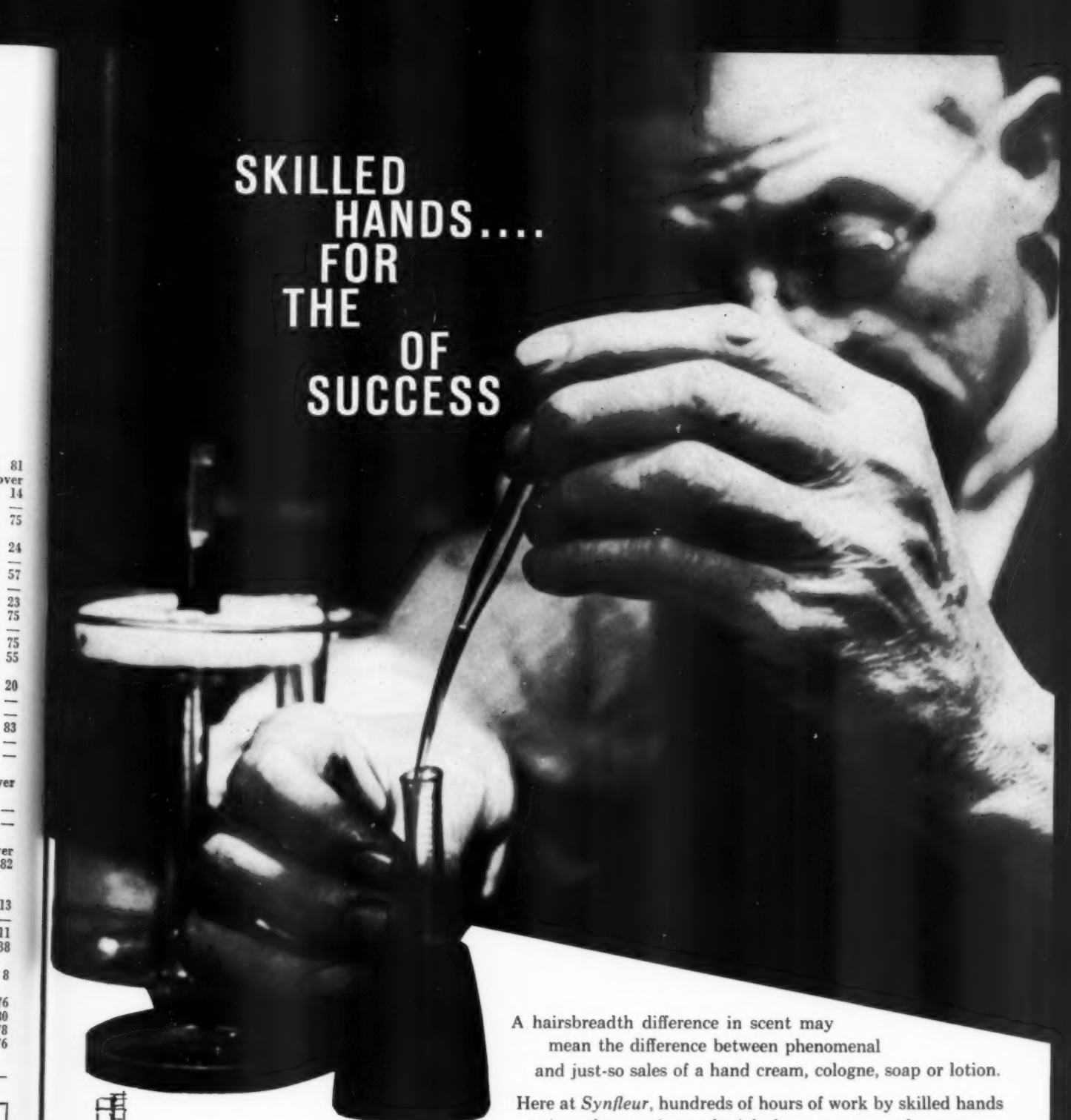

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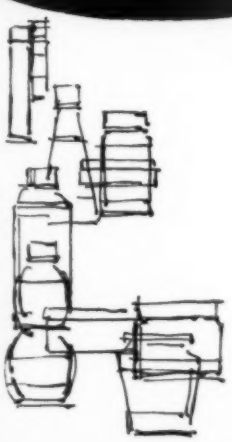

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